

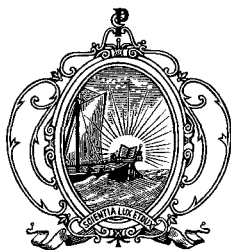
COLLOQUIA ANTIQUA

2

INSIGHTS INTO HITTITE HISTORY AND ARCHAEOLOGY

Edited by

HERMANN GENZ and DIRK PAUL MIELKE



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TABLE OF CONTENTS

Preface	<i>Gocha R. Tsetskhladze</i>	VII
Introduction	<i>Dirk Paul Mielke and Hermann Genz</i>	IX
List of Abbreviations		XI
List of Illustrations		XIII
CHAPTER 1	Research on the Hittites: A Short Overview <i>Hermann Genz and Dirk Paul Mielke</i>	1
CHAPTER 2	History of the Hittites <i>Horst Klengel</i>	31
CHAPTER 3	The Written Legacy of the Hittites <i>Theo P.J. van den Hout</i>	47
CHAPTER 4	Hittite State and Society <i>Trevor R. Bryce</i>	85
CHAPTER 5	Environment and Economy in Hittite Anatolia <i>Walter Dörfler, Christa Herking, Reinder Neef, Rainer Pasternak and Angela von den Driesch</i>	99
CHAPTER 6	Hittite Military and Warfare <i>Jürgen Lorenz and Ingo Schrakamp</i>	125
CHAPTER 7	Hittite Cities: Looking for a Concept <i>Dirk Paul Mielke</i>	153
CHAPTER 8	Hittite Temples: Palaces of the Gods <i>Caroline Zimmer-Vorhaus</i>	195
CHAPTER 9	Open-Air Sanctuaries of the Hittites <i>A. Tuba Ökse</i>	219

CHAPTER 10	Hittite Pottery: A Summary <i>Ulf-Dietrich Schoop</i>	241
CHAPTER 11	Metals and Metallurgy in Hittite Anatolia <i>Jana Siegelová and Hidetoshi Tsumoto</i>	275
CHAPTER 12	Foreign Contacts of the Hittites <i>Hermann Genz</i>	301
	List of Contributors	333
	Index	335

PREFACE

When I visited the erstwhile capital of the Hittite empire and nearby sites in September 2001, I was amazed by the rapid pace of advance in Hittite archaeology. Our guide was Hermann Genz, a passionate advocate of the Hittites. Together, we have participated in various Anatolian Iron Age symposia. His papers and his other publications reinforced my belief that the English-speaking world, especially the students at Anglo-Saxon universities, would benefit from a single volume dedicated to a thematic examination and exposition of the Hittites and their civilisation, written by those directly involved with the subject. Such a volume would bring together up-to-date developments and the latest thoughts of acknowledged experts. In his various review articles on new publications for *Ancient West & East*, Dirk Paul Mielke has confirmed the need for a work such as this.

Here is the result. H. Genz and D.P. Mielke have enthusiastically assembled contributions from a very distinguished body of authors. I would like to thank them all, editors and authors, for their efforts. Thanks are also due to our anonymous referees for their suggestions and inciteful comments.

A few publications have appeared in English since work on this volume commenced. These are more in the nature of reference works, and they take a largely historical approach. Together with the present volume, they provide a well-rounded view of Hittite civilisation.

Gocha R. Tsetskhladze
Series Editor
Melbourne, January 2008

INTRODUCTION

The idea of compiling a volume about the Hittites was proposed to us by Gocha Tsetsckhladze in 2002. The main objective of this volume is to give an overview of recent developments and new approaches in Hittite studies. As much of the work that has been done in recent years has been published only in German, another aspect of this volume is to make these new results accessible to the English-speaking world and thus to a wider audience. We are extremely grateful to Gocha Tsetsckhladze for the proposal and for his constant encouragement as well as for editing this volume for the series *Colloquia Antiqua*. The index has been compiled by Marshall Woodworth. We would like to thank all the authors for their contributions and for their patience with us, and James Hargrave for his thoroughness as a copy-editor. We hope that this book will find a broad resonance and that it will make a contribution to promoting interest in the Hittites.

Dirk Paul Mielke and Hermann Genz
Madrid and Beirut, July 2009

LIST OF ABBREVIATIONS

AA	<i>Archäologischer Anzeiger</i>
AAA	<i>Annals of Archaeology and Anthropology</i>
AAS	<i>Anatolian Archaeological Studies</i>
AASOR	<i>Annual of the American Schools of Oriental Research</i>
ABoT	K. Balkan, Ankara arkeoloji müzesinde bulunan Boğazköy-tabletleri (Istanbul 1948)
ADTCFD	Ankara Üniversitesi Dil ve Tarih-Coğrafya Fakültesi Dergisi
AfO	<i>Archiv für Orientforschung</i>
AJA	<i>American Journal of Archaeology</i>
AntWelt	<i>Antike Welt</i>
AoF	<i>Altorientalische Forschungen</i>
APA	<i>Acta Praehistorica et Archaeologica</i>
ARKIVOC	<i>Archive for Organic Chemistry</i> [on-line journal: www.arkat-usa.org]
ArOr	<i>Archiv Orientalní</i>
AS	<i>Anatolian Studies</i>
AST	<i>Araştırma Sonuçları Toplantısı</i>
AWE	<i>Ancient West & East</i>
BaghdMitt	<i>Baghdader Mitteilungen</i>
BAR	<i>British Archaeological Reports</i>
BASOR	<i>Bulletin of the American Schools of Oriental Research</i>
BiblOr	<i>Bibliotheca Orientalis</i>
BMECCJ	<i>Bulletin of the Middle Eastern Culture Center in Japan</i>
BoSt	<i>Boğazköy Studien</i>
BSA	<i>Annual of the British School at Athens</i>
CDOG	<i>Colloquium der Deutschen Orient-Gesellschaft</i>
CTH	E. Laroche, <i>Catalogue des textes hittites</i> (Paris 1971)
HdA	<i>Handbuch der Altertumswissenschaft</i>
HdO	<i>Handbuch der Orientalistik</i>
HFAC	<i>Hittite Fragments in American Collections</i>
HKM	<i>Hittite Cuneiform Tablets from Maşat Höyük</i>
IBoT	<i>Istanbul Arkeoloji Müzelerinde Bulunan Boğazköy Tabletlerinden Seçme Metinler</i> (Istanbul 1944, 1947, 1954; Ankara 1988)
IstMitt	<i>Istanbuler Mitteilungen</i>
JAOS	<i>Journal of the American Oriental Society</i>
JCS	<i>Journal of Cuneiform Studies</i>
Jdl	<i>Jahrbuch des Deutschen Archäologischen Instituts</i>
JKF	<i>Jahrbuch für kleinasiatische Forschungen</i>
JNES	<i>Journal of Near Eastern Studies</i>
KBo	<i>Keilschrifttexte aus Boghazköi</i> (Leipzig/Berlin)
KST	<i>Kazı Sonuçları Toplantısı</i>
KUB	<i>Keilschrifturkunden aus Boghazköi</i> (Berlin)
KuSa	<i>Keilschrifturkunden aus Kuşaklı-Sarissa</i>

<i>MDOG</i>	<i>Mitteilungen der Deutschen Orient-Gesellschaft</i>
<i>MIO</i>	<i>Mitteilungen des Instituts für Orientforschungen</i>
<i>NABU</i>	<i>Nouvelles Assyriologique Brèves et Utilitaires</i>
<i>NBA</i>	<i>Nürnberger Blätter zur Archäologie</i>
<i>OJA</i>	<i>Oxford Journal of Archaeology</i>
<i>OLZ</i>	<i>Orientalische Literaturzeitung</i>
<i>OrAnt</i>	<i>Oriens Antiquus</i>
<i>OrAntM</i>	<i>Orientis Antiqui Miscellanea</i>
<i>PBF</i>	<i>Prähistorische Bronzefunde</i>
<i>PP</i>	<i>Parola del Passato</i>
<i>PRU IV</i>	J. Nougayrol, <i>Le Palais Royal d'Ugarit IV: Mission de Ras Shamra IX</i> (Paris 1956)
<i>PZ</i>	<i>Præhistorische Zeitschrift</i>
<i>RA</i>	<i>Revue Archéologique</i>
<i>RDAC</i>	<i>Report of the Department of Antiquities, Cyprus</i>
<i>RHA</i>	<i>Revue Hittite et Asianique</i>
<i>RLass</i>	<i>Reallexikon der Assyriologie und Vorderasiatischen Archäologie</i>
<i>RS</i>	<i>Tablets from Ras Shamra</i>
<i>SIMA</i>	<i>Studies in Mediterranean Archaeology</i>
<i>SMEA</i>	<i>Studi micenei ed egeo-anatolici</i>
<i>StBoT</i>	<i>Studien zu den Boğazköy-Texten</i>
<i>TAD</i>	<i>Türk Arkeoloji Dergisi</i>
<i>TAVO</i>	<i>Tübinger Atlas des Vorderen Orients</i>
<i>THeth</i>	<i>Texte der Hethiter</i>
<i>TTKY</i>	<i>Türk Tarih Kurumu Yayınları</i>
<i>TÜBA-AR</i>	<i>Türkiye Bilimler Akademisi Arkeoloji Dergisi</i>
<i>UF</i>	<i>Ugarit-Forschungen</i>
<i>WVDOG</i>	<i>Wissenschaftliche Veröffentlichungen der Deutschen Orient-Gesellschaft</i>
<i>WZKM</i>	<i>Wiener Zeitschrift für die Kunde des Morgenlandes</i>
<i>ZAss</i>	<i>Zeitschrift für Assyriologie</i>

LIST OF ILLUSTRATIONS

CHAPTER 1

Fig. 1. Map of the Hittite sites (settlements, cemeteries, hoards) mentioned in the text: (1) Boğazköy, (2) Alaca Höyük, (3) Ortaköy, (4) Hüseyindede Tepesi, (5) Maşat Höyük, (6) Kuşaklı, (7) Alişar Höyük, (8) İnandıktepe, (9) Kaman Kalehöyük, (10) Eflatun Pınar, (11) Gavurkalesi, (12) Porsuk, (13) Gordion, (14) Beycesultan, (15) Tarsus, (16) Kilise Tepe, (17) Kinet Höyük, (18) Norşuntepe, (19) Korucutepe, (20) İmikuşağı, (21) Tepecik, (22) Lidar Höyük, (23) Karkamiş, (24) Ugarit, (25) Emar, (26) Osmerkaya, (27) Büğet/Ferzant, (28) Kazankaya, (29) Ilıca, (30) Yanarlar, (31) Şarkışla, (32) Kastamonu, (33) Bolu, (34) Kayalıpınar, (35) Oymağaç, (36) Sirkeli Höyük (D.P. Mielke).

Fig. 2. Overview of Hittite chronology, including list of Hittite kings, important synchronisms, absolute dates and periodisations (D.P. Mielke).

CHAPTER 2

Fig. 1. Map of the ancient Near East with the most important places and modern geographical names mentioned in the text (D.P. Mielke).

Fig. 2. Map of Anatolia and North Syria with the most important places and ancient geographical names (D.P. Mielke).

Fig. 3. So-called ‘marriage stele’ from Abu Simbel. The Great King Ḫattušili III (right) brings his daughter (middle) to the Pharaoh Ramesses II (left) (after R. Lepsius, *Denkmäler aus Ägypten und Äthiopien* Abteilung III, Band VII [Berlin 1849-59], Bl. 196).

CHAPTER 3

Fig. 1.

(1) Typical clay tablet with columns (vertical lines) and paragraphs (horizontal lines). KBo 4.14. Dimensions: 33 × 21 × 6.5 cm. On the back between the column lines the so-called ‘firing holes’ can be seen (template T.P.J. van den Hout);

(2) ‘Oracle liver’ – Clay tablet in the shape of a sheep’s liver, inscribed with omens. KUB 37.223 (321/d). Greatest diameter about 12 cm (after F. Köcher, *Literarische Texte in akkadischer Sprache* [KUB 37] [Berlin 1953], no. 223);

(3) Small ‘etiquette’. KUB 30.75 (803/c). Greatest diameter about 6 cm (after H. Ehelolf, *Texte verschiedenen Inhalts [vorwiegend aus den Grabungen seit 1931]* [KUB 30] [Berlin 1939], no. 75);

(4) ‘Land deed’ with seal impression on the front. Bo 90/758. Dimensions: 10.4 × 8 × 4.4 cm (after Rüster 1993, fig. 1).

Fig. 2. Bronze tablet from the Upper City in Boğazköy-Ḫattuša. Dimensions: 35 × 23.5 × 0.8/1 cm, weight 5 kg (after Seeher 2003, fig. 7).

Fig 3.

(1) Writing board from the shipwreck of Ulu Burun, situated on the southern coast of Turkey. The surfaces for writing originally were coated with wax. Dimensions of the tablets: 9.5 × 6.2 cm (after Payton 1991, fig. 2);
 (2-4) Bronze styli from Boğazköy. Length of the larger object: 16.5 cm (after Boehmer 1979, Taf. XIX.3397; 1972, Taf. XLI.1214, 1218).

Fig. 4.

(1) Secondly incised numerical signs on a clay tablet from Boğazköy. KUB 34.68 (after H. Otten, 'Die inschriftlichen Funde'. *MDOG* 88 [1955], 34, Abb. 15);
 (2) Incisions of human heads on a clay tablet from Boğazköy. KUB 38.3 II (after H. Klengel, *Hattuschili und Ramses: Hethiter und Ägypter – ihr langer Weg zum Frieden* [Mainz 2002], Abb. 39).

Fig. 5. Map of find-spots of Hittite clay tablets (squares) and inscriptions in Luwian hieroglyphs from the 2nd millennium (circles):

(1) Sipylus, (2) Karabel, (3) Suratkaya/Latmos, (4) Çivril, (5) Beyköy, (6) Kocaoğus, (7) Yağrı, (8) Yalburt, (9) Köylütolu, (10) Hatip, (11) Emirgazi, (12) Malkaya, (13) Karga, (14) Yozgat?, (15) Delihasanlı, (16) Boğazköy-Ḫattuša/Yazılıkaya, (17) İnandıktepe, (18) Alaca Höyük, (19) Ortaköy-Sapinuwa, (20) Maşat Höyük-Tappiga, (21) Kaya-lıpinar, (22) Kuşaklı-Sarissa, (23) Karakuyu, (24) İmamkulu, (25) Hanyeri, (26) Fraktın, (27) Taşçı, (28) Hemite, (29) Tarsus, (30) Sirkeli, (31) Çağdın, (32) Meskene-Emar, (33) Ḫalab/Aleppo, (34) Tell Ačana-Alalaḫ, (35) Ras Shamra-Ugarit, (36) Oymaağaç (design and layout D.P. Mielke).

Fig. 6. Inscription in Luwian hieroglyphs:

(1) On the 'altar' from Emirgazi (after L. Messerschmidt, *Corpus inscriptionum Hettitarum* Zweiter Nachtrag [Mitteilungen der Vorderasiatisch-Ägyptischen Gesellschaft 11.5] [Berlin 1906], Taf. L);
 (2) The so-called Südburg inscription from the Hittite capital Ḫattuša (after Hawkins 1995, Abb. 35).

Fig. 7. Seals and seal impressions:

(1) Gold seal from Alaca Höyük (after R.M. Boehmer and H.G. Güterbock, *Glyptik aus dem Stadtgebiet von Boğazköy* [Berlin 1987], Abb. 34);
 (2) The so-called 'Tyskiewicz Seal' (after H. Müller-Karpe, *Handbuch der Vorgeschichte*, vol. 4, pt 3 [Munich 1980], Taf. 173.15);
 (3) Tonbulla with several seal impressions from Kuşaklı-Sarissa (after A. Müller-Karpe, 'Untersuchungen in Kuşaklı 1997'. *MDOG* 130 [1998], 103, Abb. 7).

Fig. 8. Fragment of a clay tablet from Boğazköy-Ḫattuša containing a 'shelf list'. KUB 30.50 V (Oriental Institute, Chicago; photograph H.A. Hoffner).

Fig. 9. Plan of Boğazköy-Ḫattuša, giving the locations of the more important collections of clay tablets (according to the Boğazköy expedition).

CHAPTER 4

Fig. 1. Depiction of kings as warrior:

(1-2) Rock reliefs at Karabel and Hemite (after K. Kohlmeyer, 'Felsbilder der hethitischen Großreichszeit'. *APA* 15, 1983, fig. 2, fig. 39); (3) King and queen during their

religious responsibilities, relief stones from the Sphinx Gate at Alaca Höyük (after H. Müller-Karpe, *Handbuch der Vorgeschichte*, vol. 4, pt 3 (Munich 1980), Taf. 176, B3).

Fig. 2. Rock relief at Fraktın. The Great King Hattušili III and his wife, the Queen Puduḥepa, perform an offering with libation (after K. Kohlmeyer, 'Felsbilder der hethitischen Großreichszeit'. *APA* 15, 1983, figs. 24-25).

Fig. 3. Seal impression of Puduḥepa:

(1) Seal of Puduḥepa from Boğazköy; (2) Seal of Puduḥepa and her husband Hattušili III from Boğazköy; (3) Seal of Puduḥepa and her son, the Great King Tuḫaliya IV from Ugarit (after H. Müller-Karpe, *Frauen des 13. Jahrhunderts v. Chr.* [Mainz 1985], Abb. 29.1, 4; 33).

CHAPTER 5

Fig. 1. Map of the vicinity of Kuşaklı-Sarissa. The 'Šuppitaššu Gölü' is located in mountains south of the city. The sediments of this lake provided material for important palaeo-environmental studies (after A. Müller-Karpe 2002b, Abb. 1).

Fig. 2. Frequency of wood species from the excavations in Boğazköy-Hattuša and Kuşaklı-Sarissa (after Dörfler *et al.* 2000, Abb. 9).

Fig. 3. Plant macro-remains from Boğazköy-Hattuša and Kuşaklı-Sarissa.

1 = single finds, + = rare finds, ++ = occasional finds, +++ = regular finds, ++++ = dominant species.

Fig. 4. Plan of silo complex behind the postern wall, Boğazköy-Hattuša (after Seeher 2001, Abb. 1).

Fig. 5. Boğazköy-Hattuša. Reconstruction drawing of the silo pits on Büyükkaya (Boğazköy Expedition; drawing: U. Betin).

Fig. 6. Hittite depictions of various animals:

(1) Rams on the reliefs at the Sphinx Gate in Alaca Höyük. The animals are led to the sacrifice in a procession (after H. Müller-Karpe 1980, Taf. 176, B1);
 (2) Dog on the reliefs at the Sphinx gate in Alaca Höyük (after Akurgal 1995, şek 58);
 (3) Dog on a relief sherd from Boğazköy (after Boehmer 1983, Taf. XXI.77);
 (4-5) Equids on relief sherds from Boğazköy (after Boehmer 1983, Taf. XXXVII.105-106);
 (6) Hunting scene on the Taprammi bowl. Remarkable is the technique of using a captive deer to attract wild animals (after Emre and Çınaroğlu 1993, fig.23);
 (7) Sketch of a lion on a cuneiform tablet from Boğazköy (after Ünal 1989, fig. 2.4);
 (8) Boars hunt on the reliefs at the Sphinx Gate in Alaca Höyük (after Akurgal 1995, şek. 51).

Fig. 7. Wild mammals and birds recorded in the different Hittite sites of Turkey (number of finds). 1 = Early Kingdom; 2 = Great Empire.

CHAPTER 6

Fig. 1. Swords and axes. Examples of swords used by the Hittites found at Tell Atchana (1), Ugarit (2), Tell es-Sa'idiye (3), Şarköy (4); (5) Warrior God from the King's Gate,

Boğazköy, with a helmet, sword and axe; (6-9) Axes found at Kültepe (6), Sivas (7) and (9), and Boğazköy (8) (after Geiger 1993 [1-4]; H. Müller-Karpe 1980, Taf. 170 B 3 [5]; Erkanal 1977, Taf. 5.59, 60, 54 [6-8]; Ökse and Toy 1992, 147, fig. 6 [9]).

Fig. 2. Scale armour as worn by chariot warriors:

- (1) Typical bronze armour-scales from Boğazköy (after Macqueen 1986, 63, fig. 33);
- (2) Reconstruction of armour-scales from Kamid el-Loz (Lebanon) sewn on a textile or leather undercoat (after Ventzke 1983, 98, fig. 48);
- (3) Chariot warrior protected by helmet and scale armour on a wall-painting from Thebes (Egypt) (after Ventzke 1983, 97, fig. 46);
- (4) Long scale armour coat depicted on an Egyptian wall-painting from Thebes (after Ventzke 1983, 97, fig. 46);
- (5) Different types of scale armour according to their size and number of scales (after Ventzke 1983, 98, fig. 49).

Fig. 3. Arrowheads and a lance head:

- (1-3) Elliptical arrowheads from Boğazköy (after Boehmer 1972, Taf. 30, nos. 876-878);
- (4-5) Barbed arrowheads from Kuşaklı (after A. Müller-Karpe 2001, 229, Abb. 4.4-5);
- (6) Lance head from Kuşaklı, presumably for close combat (after A. Müller-Karpe 2001, 229, Abb. 4.6).

Fig. 4. Sherds of a Hittite bowl with incised depiction of a battle scene with a 'foreign' warrior wearing a helmet and a short sword. The lower part of the scene shows a pair of feet which belonged presumably to a slain warrior (after Bittel 1976, figs. 1 and 3).

Fig. 5. Scenes from Egyptian reliefs depicting the Battle of Qadeš from Luxor (1) and Abu Simbel (2-4):

- (1) Hittite soldiers armed with swords; (2) Hittite soldiers armed with lances; (3) Hittite chariots in advance; (4) Egyptian chariotry (left) charges Hittite chariot troops (right) (all after H. Müller-Karpe 1980, Taf. 59-61, 27).

Fig. 6. Hittite infantry and chariot troops in front of the city of Qadeš as portrayed on Egyptian reliefs from Luxor (after H. Müller-Karpe 1980, Taf. 58).

Fig. 7.

- (1) Horse-bits from Şarkışla (after H. Müller-Karpe 1980, Taf. 159 C1);
- (2) Yoke peg or knob from Kuşaklı (after A. Müller-Karpe 1998, 136, Abb. 27);
- (3) Spoked wheel from Lidar Höyük (after Littauer, Crouwel and Hauptmann 1991, Abb. 3);
- (4) Reconstruction of a typical Late Bronze Age chariot (after Littauer and Crouwel 1979, Taf. 42).

CHAPTER 7

Fig. 1. Map of Boğazköy-Ḫattuša (Boğazköy Expedition).

Fig. 2. Map of Alaca Höyük (after Çınaroğlu and Genç 2003, Çiz. 1, 2 and 4, and A. Müller-Karpe 1994, Abb. 58).

Fig. 3. Map of Kuşaklı-Sarissa (Kuşaklı Expedition).

Fig. 4. Architecture:

(1) Reconstruction drawing of Kuşaklı-Sarissa (Kuşaklı Expedition; drawing: M. Ober); (2) Burnt wall with negative traces of a timbered wall construction from Büyükkale/Boğazköy (after Naumann 1971, Abb. 92); (3) Reconstruction of a wall from Temple 1 in Boğazköy by P. Neve (after Neve 1969, Abb. 2); (4-6) Depictions of architecture on Hittite pottery from Boğazköy (4: after Schirmer 1985, fig. 126; 5-6: after Parzinger and Sanz 1992, Taf. 64.27, 31).

Fig. 5. Hittite palaces:

(1) Büyükkale/Boğazköy-Hattuša (after Seeher 2002, fig. 4); (2) Maşat Höyük-Tapikka (after Özgüç 1982, plan 4); (3) Ortaköy-Sapinuwa, Building A (after A. Süel 2002, fig. 4); (4) Alaca Höyük (after Bittel 1976, Abb. 111); (5) İnandıktepe (after Özgüç 1988, plan I).

Fig. 6. Buildings with special function:

(1) Boğazköy, Temple 3 (after Neve 1999, Abb. 72a); (2) Boğazköy, Temple 6 (after Neve 1999, Abb. 72b); (3) Boğazköy, North Building (after Neve 1996a, Abb. 134); (4) Kuşaklı, 'Caravansery' (Kuşaklı Expedition); (5) Boğazköy, House at the slope (after Schirmer 1996, Beil. 1); (6) Boğazköy, Sarıkale (after Naumann 1983, Abb. 2); (7) Boğazköy, Nişantepe (after Neve 1996a, Abb. 174).

Fig. 7. Domestic quarters:

(1) Boğazköy, Lower City (after H. Müller-Karpe 1980, Taf. 168 A); (2) Boğazköy, Upper City, period Ost. 2 (after Neve 1999, Beil. 42); (3) Kuşaklı, west slope, Level 2 (Kuşaklı Expedition).

Fig. 8. Storage installations and magazines:

(1) Kuşaklı, reconstruction drawing of the granary at the south point (Kuşaklı Expedition; drawing: M. Ober); (2) Boğazköy, ideal drawing of a silo pit (drawing: D.P. Mielke); (3) Boğazköy, magazine rooms with pithoi in the lower city (after Neve 1969, Abb. 3); (4) Ortaköy, Building B, magazine with pithoi installations (after M. Süel 2001, 681).

Fig. 9. Fortification elements:

(1) Boğazköy, King's gate (after Schirmer 2002, Abb. 5); (2) Boğazköy, reconstruction drawing of the King's gate (after Schirmer 2002, Abb. 4); (3-4) Alaca Höyük, postern gate, and reconstruction of section of postern gate (after Koşay and Akok 1966, Lev. 89); (5) Boğazköy, Yerkapı, section of the postern (after Neve 2001, Beil. 2); (6) Boğazköy, Yerkapı, map of the fortification system (after Neve 2001, Abb. 3a); (7) Reconstruction drawing of Yerkapı (after Neve 2001, Abb. 3b).

Fig. 10. Hypothetical routes and territorial borders in the upper Kızılırmak region according to A.T. Ökse (after Ökse 2000, Abb. 2, 14).

CHAPTER 8

Fig. 1. Map of Boğazköy-Hattuša with location of the temples (after Neve 1996, fig. 27).

Fig. 2. Plan of the temple structure and the rock sanctuary of Yazılıkaya (after Bittel *et al.* 1975, fig. 82).

Fig. 3. Plan (a) and isometric reconstruction (b) of Temple 5 with three small ‘chapels’ (after Neve 1996, figs. 96 and 98).

Fig. 4. Plan of the Great Temple (Temple 1) with magazines and Complex 1/South area in the Lower City of Boğazköy-Ḫattuša (after Bittel 1970, 56 fig. 13).

Fig. 5. Building plan of the Central Temple District in the Upper City of Ḫattuša (after Seeher 2002, fig. 11).

Fig. 6. Kuşaklı-Sarissa. Reconstruction of the south-east area of the city wall with the gate; behind the acropolis mound with Building C (Temple of the Weather God?). View from the south (drawing: M. Ober) (after A. Müller-Karpe 2000, fig. 5).

Fig. 7. Plan of Building C in Kuşaklı (a) and Plan of the Great Temple of Ḫattuša (b). Drawn to scale (after A. Müller-Karpe 2003, fig. 5).

Fig. 8. Plan of Temple 1 in Kuşaklı (a) and Temple 7 in the Upper City of Ḫattuša (b). Drawn to scale (after V. Müller-Karpe 2006, fig. 1).

CHAPTER 9

Fig. 1. Hittite open-air sanctuaries. Sites mentioned in the text (layout: A.T. Ökse).

Fig. 2. Plan of the spring sanctuary at Eflatun Pınar (after Özenir 2001, fig. 2).

Fig. 3. Façade of Eflatun Pınar (after Özenir 2001, fig. 3).

Fig. 4. Plan of Akpınar (after Güterbock 1956, fig. 1).

Fig. 5. Plan of the *Šuppitaššu* sanctuary (after A. Müller-Karpe 1999, fig. 20).

Fig. 6. Plan of the rock sanctuary at Yazılıkaya (after Bittel 1975, Beilage 2-3).

Fig. 7. Reconstruction of Chamber A at Yazılıkaya (after Bittel 1975, pl. 8.1).

Fig. 8. Plan of the rock sanctuary at Gavurkalesi (after Lumsden 2002, fig. 12).

CHAPTER 10

Fig. 1. Boğazköy-Ḫattuša: (A-C, 1-3) Flat bowls (A: after Fischer 1963, Taf. 90.783 [Unterstadt 3]; B: after Fischer 1963, Taf. 96.875 [Osmankayası stray]; C: valley west of Sarıkale; 1: after Parzinger and Sanz 1992, Taf. 58.8 [Unterstadt 1a]; 2: Büyükkaya Northern Gate; 3: Büyükkaya Silo 5); (4-5) Deep bowls (4: after Fischer 1963, Tf. 104.948 [Büyükkale III]; 5: after Seidl 1975, 96 no. 9); (6-7) Small pots and lid (valley west of Sarıkale); (8-9) ‘Votive’ vessels (after Fischer 1963, Tf. 119.1048, 1038 [Büyükkale III a]); (10) Baking plate (valley west of Sarıkale).

Fig. 2. Boğazköy-Ḫattuša: Portable oven on a baking plate from the Lower Plateau of Büyükkaya (Boğazköy Expedition, photographic archive).

Fig. 3. Boğazköy-Ḫattuša: Selection of vases from the valley west of Sarıkale (Boğazköy Expedition, photographic archive).

Fig. 4. Boğazköy-Hattuša: (1, 4) Multipurpose pots (1: after Seidl 1975, 103 no. 43; 4: after Parzinger and Sanz 1992, Tf. 17.1 [Oberstadt Temple 10]); (2) *Signe royal* (after Seidl 1972, Abb. 2 A15a [Unterstadt 2]); (3) Storage jar (valley west of Sankale); (5) Cooking pot (after Seidl 1975, 105, no. 51).

Fig. 5. Boğazköy-Hattuša: (1) Beak-spouted jug (after Neve 1984, 67 Abb. 4.1 [Unterstadt 3c]); (2) Tubular-spouted jug (after Neve 1984, 69 Abb. 6.14 [Unterstadt 3c]); (3) Lentoid flask (after Fischer 1963, Taf. 49.488 [Unterstadt 2]).

Fig. 6. Hüseyindede Tepesi (1) and İnandıktepe (2): Relief-decorated vessels (after Mielke 2006a, Abb. 141). Boğazköy-Hattuša: (3) Spindle bottle (after Parzinger and Sanz 1992, Taf. 21.5 [Oberstadt Temple 15]); (4) Arm-shaped vessel (after Fischer 1963, Taf. 122.1124 [Unterstadt 1]).

CHAPTER 11

Fig. 1. Quantitative ratios of various kinds of raw metal according to A. Müller-Karpe: (1) in Hittite tax lists; (2) in Hittite inventory lists of palaces and temples (after A. Müller-Karpe 1994, Abb. 50a-b).

Fig. 2. Distribution of metal ores in Anatolia (after A. Müller-Karpe 1994, Abb. 1).

Fig. 3. Finds related to metallurgical activities (3-9 to same scale):

- (1) and (2) Copper 'ox-hide' ingots from Cape Gelidonya, length (1) 74 cm, (2) 66 cm (after H. Müller-Karpe 1980, Taf. 161.34-35);
- (3) Pot-bellow from Alaca Höyük, diameter 37.5 cm (after A. Müller-Karpe 1994, Taf. 2.1);
- (4) Clay tuyères from Boğazköy, length 9 cm (after A. Müller-Karpe 1994, Taf. 3.14);
- (5) Clay crucible from Tarsus, height 10.2 cm (after A. Müller-Karpe 1994, Taf. 13.1);
- (6) Stone hammer from Boğazköy, length 5.4 cm (after A. Müller-Karpe 1994, Taf. 62.14);
- (7) Stone mould for ornaments of precious metal from Tarsus (after A. Müller-Karpe 1994, Taf. 51.4);
- (8) Stone mould for axe from Boğazköy (after A. Müller-Karpe 1994, Taf. 25.5);
- (9) Clay mould for bar-shaped ingot from Alişar Höyük; (a) A Syrian bringing 'ox-hide' ingots on Egyptian wall-painting from Tomb 100 (Tomb of Rekhmire) in Thebes; (b) Scene of metalworking on Egyptian wall-painting from Tomb 100 in Thebes (after A. Müller-Karpe 1994, Taf. 15.4; (a) H. Müller-Karpe 1980, Taf. 14; (b) A. Müller-Karpe 1994, Abb. 82).

Fig. 4. Tools (various scales):

- (1) Bronze chisel from Boğazköy, length 19.8 cm (after A. Müller-Karpe 1994, Taf. 74.11);
- (2) Bronze awl from Boğazköy (after Boehmer 1972, Taf. XXXVIII.963);
- (3) Bronze multiple-chisel from Boğazköy, length 8.8 cm (after A. Müller-Karpe 1994, Taf. 65.10);
- (4) Bronze chisel(?) from Boğazköy, length 4.2 cm (after A. Müller-Karpe 1994, Taf. 63.10);
- (5) Bronze needle from Boğazköy, length 5.8 cm (after Boehmer 1972, Taf. XXII.508);

- (6) Bronze saw from Bogazköy, length 67.5 cm (after Neve 1989, Abb. 1);
- (7) Bronze lugged-adze from Boğazköy, length 15 cm (after Erkanal 1977, Taf. 2.,21);
- (8) Bronze leather-knife(?) from Tarsus, length 7.3 cm (after H. Müller-Karpe 1980, Taf. 162, B12);
- (9) Bronze fork from Sivas Region. Eskişehir Museum, length 65.6 cm (after Yalçıklı 2000, Abb. 1a);
- (10) Bronze sickle-blade from Tarsus, length 12.6 cm (after H. Müller-Karpe 1980, Taf. 162, B13);
- (11) Bronze knife from Boğazköy; (a) Working scene with chisel and hammer on contemporary Egyptian wall-painting from Tomb 100 in Thebes; (b) Scene of wood-working on contemporary Egyptian wall-painting from Tomb 100 in Thebes; (c) Working scene with needle on contemporary Egyptian wall-painting from Tomb 100 in Thebes; (d) Scene of leather-working on contemporary Egyptian wall-painting from Tomb 100 in Thebes; (e) Scene of agricultural activities on contemporary Egyptian wall-painting from Tomb 52 (Tomb of Nakht) in Thebes (after H. Müller-Karpe 1980, Taf. 171.17; a-c: Taf. 16.3; d: Taf.15.6; e: Taf. 21A).

Fig. 5. Ornaments and figurines (same scale):

- (1) Various types of pins from Boğazköy (after H. Müller-Karpe 1980, Taf. 171.21-32; Boehmer 1972, Taf. XXI.469; Taf. XXII.519);
- (2) Crescent-shaped pendants from Boğazköy (after H. Müller-Karpe 1980, Taf. 171.34-35);
- (3) Round pendants from Boğazköy (after H. Müller-Karpe 1980, Taf. 171.38-40, 42);
- (4) Amulet figurines; (4a) Gold pendant depicting sitting goddess from Kayalıboğaz/Boğazköy;* (4b) Bronze pendant depicting standing god. Anadolu Medeniyetleri Müzesi, Ankara; (4c) Gold ornament depicting sitting goddess with a child. Metropolitan Museum of Art, New York (after H. Müller-Karpe 1980, Taf. 173.1-2, 4);
- (5) Bronze statue of standing god from Dövelek. Anadolu Medeniyetleri Müzesi, Ankara (after H. Müller-Karpe 1980, Taf. 176, A5).

Fig. 6. Cultic vessels and weapon (to same scale):

- (1) Bowl from Kınık. Kastamonu Museum (after Emre and Çınaroğlu 1993, figs. 22-23);
- (2) Ox-head shaped rhyton from Kınık. Kastamonu Museum (after Emre and Çınaroğlu 1993, fig. 3a);
- (3) Silver rhyton from 'Anatolia'. Metropolitan Museum of Art, New York (after H. Müller-Karpe 1980, Taf. 176, A2);
- (4) Ceremonial axe from Şarkışla(?). Vorderasiatisches Museum, Berlin (after Erkanal 1977, Taf. 20).

CHAPTER 12

Fig. 1. Map showing sites mentioned in the text:

- (1) Nezero, (2) Thebes, (3) Mycenae, (4) Mirabello, (5) Troy, (6) Karabel, (7) Metropolis, (8) Kuşadası, (9) Miletus, (10) Suratkaya, (11) Ialysos, (12) Şarhöyük-Dorylaion, (13) Kırıkkale, (14) Boğazköy-Hattuša, (15) Alaca Höyük, (16) Ortaköy-Şapinuwa, (17) Maşat Höyük, (18) Alişar Höyük, (19) Kuşaklı-Sarissa, (20) Tarsus, (21) Hagia Paraskevi, (22) Tamassos, (23) Kalavassos-Hagios Demetrios, (24) Hala Sultan Tekke, (25) Ras Şamra-Ugarit, (26) Alalaş, (27) Halaab/Aleppo, (28) Tell Mardih-Ebla, (29) Karkamiş, (30) Emar, (31) Tell Faqous, (32) Tell Fray, (33) Tell Kazel, (34) Qatna,

(35) Qadeš, (36) Megiddo, (37) Tel Nami, (38) Aphek, (39) Tell el-Fara (S), (40) Pi Ramesse, (41) Tell el-Amarna, (42) Dur Katlimmu, (43) Aššur, (44) Nuzi, (45) Babylon.

Fig. 2. Foreign objects from Hittite Anatolia:

- (1) Stela with inscription of Pharaoh Ramesses II from Boğazköy (after Bittel 1983, Abb. 83);
- (2) Obsidian vessel with inscription of Pharaoh Chian from Boğazköy (after Bittel 1983, Abb. 84);
- (3) Mycenaean sherd of a kylix from Boğazköy (after Genz 2004, Abb. 1a);
- (4) Mycenaean sherds of a small piriform jar from Kuşaklı (after Mielke 2004b, Abb. 13b);
- (5) Mycenaean stirrup jar from Maşat Höyük (after Özgünel 1996, 106, FS 171, 5);
- (6) Aegean or Western Anatolian sword from Boğazköy (after A. Müller-Karpe 1994, Abb. 2.2);
- (7) Fragment of an ox-hide ingot from Boğazköy (after A. Müller-Karpe 1980, Abb. 22);
- (8) Cylinder seal from Alaca Höyük (after Boehmer and Güterbock 1987, Abb. 81c).

Fig. 3. Ivory lid from Megiddo (after Alexander 1991, fig. 2).

Fig. 4. Hittite seals and seal impressions from different sites:

- (1) Seal of Muršili II from Ugarit (after Beyer 2001, fig. 25a);
- (2) Signet-ring from Tel Nami (after Singer 1993, pl. IX);
- (3) Biconical seal from Ugarit (after Beyer 2001, fig. 25c);
- (4) Gold seal from Tamassos (after Beyer 2001, fig. 25b);
- (5) Seal impression from Emar (after Beyer 2001, Pl. F: C3);
- (6) Bulla from Tel Aphek (after Singer 1977, fig. 1);
- (7) Seal from Mirabello (after Boardman 1966, fig. 3);
- (8) Seal from Ialysos (after Boardman 1966, fig. 2).

Fig. 5. Hittite statuettes from different sites:

- (1) Silver pendant from Kalavassos-Hagios Demetrios (after Herscher 1995, 272, fig. 15; drawing: H. Tsumoto);
- (2) Silver pendant from Tell el-Amarna (after Bell 1986, ill. 1; drawing: H. Tsumoto);
- (3) Silver stag from Mycenae (after H. Müller-Karpe 1980, Taf. 229.5).

CHAPTER 1

RESEARCH ON THE HITTITES: A SHORT OVERVIEW

Hermann GENZ and Dirk Paul MIELKE

INTRODUCTION

Unlike the Bronze Age civilisations of Egypt and Mesopotamia, which have always sparked the interest of the general public, knowledge of the Hittites, one of the leading powers of the ancient Near East in the Late Bronze Age, was more or less restricted to a few specialists. However, the past few years have witnessed a marked growth of interest in the Hittites. From 1990s onwards a number of new books have appeared which dealt with different aspects of Hittite civilisation in a way not only intended for the imminent specialists.¹ Also the major exhibitions on the Hittites in Bonn and Berlin in 2002 with an impressive catalogue certainly helped to create a more general interest.²

The present volume aims at giving an overview on recent developments of the more important aspects in the history and archaeology of Hittite Anatolia. We deliberately tried to present the results of different disciplines such as archaeology, history, philology and the natural sciences, in order to achieve a more holistic approach for the understanding of Hittite civilisation. Naturally, the topics presented here are just a selection, and it would have been easy to include many more aspects of Hittite civilisation, such as discussions of religion, iconography, Hittite geography, the end of the Hittite empire and so on. Unfortunately lack of space has prevented us from doing so. Also excluded is the Late Hittite period; it is beyond the chronological scope set for this volume and additionally poses a number of problems of its own, which can only be understood from an Iron Age perspective, such as the relations between Neo-Hittites, Arameans, Assyrians and Phoenicians. Nevertheless, we hope that the different contributions assembled in this volume will enable readers to gain an understanding of the outlines of Hittite civilisation. Some contributions were included because recent discoveries or new research strategies opened

¹ Bryce 1998; 2002; Klengel 1999; Secher 1999; Klinger 2007; Collins 2007.

² *Die Hethiter und ihr Reich* 2002.

new paths to an understanding of the emergence, flourishing and decline of Hittite civilisation, and even changed long-held beliefs. Thus, this book necessarily cannot present final results, but rather should be seen as presenting interim statements of still ongoing discussions. Certainly many of the conclusions presented here will have to be changed in the future.

As an introduction to the very complex field of Hittite studies we first would like to present a short overview of the history of research, the major historical sources, problems in current research and, finally, of new developments and perspectives for future research. A section on useful sources for Hittite studies is added, which should enable readers to gain access to more specialised information.

HISTORY OF RESEARCH³

When in 1834 the French traveller Charles Texier discovered the ruins of Boğazköy, he had no idea that he had found the capital of the Hittite empire. Instead he and many scientists in the following years tried to identify the site with cities mentioned by ancient historians. Thus Boğazköy was variously equated with Pteria or Tavium, and consequently the ruins were dated to the 1st millennium BC. Another problem of assigning the Hittites to their correct place in history was that the mention of them in the Old Testament, as well as the identification of hieroglyphic inscriptions found at Hama in Syria as Hittite, suggested that the Hittites were to be located in Syria. The first cuneiform tablets found in Boğazköy by Ernest Chantre in 1893 already led to the suggestion that Hittite influence could have extended further north into Anatolia. But it was only the large-scale excavations undertaken from 1906 onwards by T. Makridy, H. Winckler and O. Puchstein which led to the discovery of several large cuneiform archives that allowed an identification of the site with Hattuša, the capital of the Hittite empire. At first just the few cuneiform tablets written in Akkadian could be read, but in 1915 the Hungarian scholar B. Hrozný managed to decipher the Hittite language.⁴ This, in fact, marks the birth of Hittitology. The untimely death of Winckler in 1913 prevented the prompt publication of the important results from this early excavation period at Boğazköy with the exception of the architecture.⁵ However, work on the clay

³ For a detailed history of research on the Hittites, see Canpolat 2001. This book follows the general outline of the popular account of the discovery of Hittite civilisation by Ceram 1956 (a recent edition of which was published in 2001 by the Phoenix Press, London).

⁴ Hrozný 1915.

⁵ Puchstein 1912.

tablets found at the site made enormous progress in the years following the decipherment, and by 1933 A. Goetze was able to publish a synthesis on the Hittites, which radically differed from all previous works since he could include the rich material from the Hittite capital,⁶ and which, although it was published more than 80 years ago, has stood the test of time remarkably well.⁷

Lack of space prevents us from following all the important developments the field of Hittite studies witnessed in the years since then, but at least the short overview about the major historical sources given below should enable the reader to get an idea of the vast amount of material that has come to light since the last century.⁸

MAJOR HISTORICAL SOURCES

The primary sources for research on the Hittites are obtained by excavations and surveys. The beginnings were dominated mainly by large-scale research excavations, but the ongoing industrialisation of also rural parts of Turkey has changed the situation to a great extent. Nowadays many smaller rescue excavations, but also large-scale rescue projects in the areas where dams are to be constructed provide a wealth of new information. Research excavations are still being undertaken, but due to the rising costs the acme of large-scale excavations is over. However, this does not lead to a standstill in research, as rescue projects continue to provide a wealth of information. In this context, we must mention the growing number of surveys, which have led to a vast increase in the number of known sites. Unfortunately at the same time the number of illegal excavations with the aim of obtaining valuable objects for the art market has dramatically increased. Thus not only is the cultural heritage of Turkey endangered but furthermore, due to the lack of precise information on the find contexts, the objects become to a great extent worthless for scientific purposes. Alas, this is the case for many finds from the Hittite period, such as the important objects from the Schimmel Collection.⁹ Scholars should take a stricter attitude opposing the trade of illegally excavated objects. It is unfortunate that objects originating from such excavations are still being acquired and published by museums.

⁶ Goetze 1933. Garstang 1929 does not yet include the evidence produced by the excavations at Boğazköy.

⁷ An updated version was published some 20 years later: Goetze 1957.

⁸ For an overview on recent developments in Hittitology, see Neu 2001.

⁹ Muscarella 1974, nos. 123-132. For the principal remarks on this problem, see Seeher 2007.

MAJOR EXCAVATIONS

As mentioned above, a large number of excavations have been undertaken in Central Anatolia as well as in other regions, many of which produced evidence for Hittite occupation or at least Hittite presence. The following list is not a complete list of all known Hittite sites, but should provide an overview of the more important sites (Fig. 1).

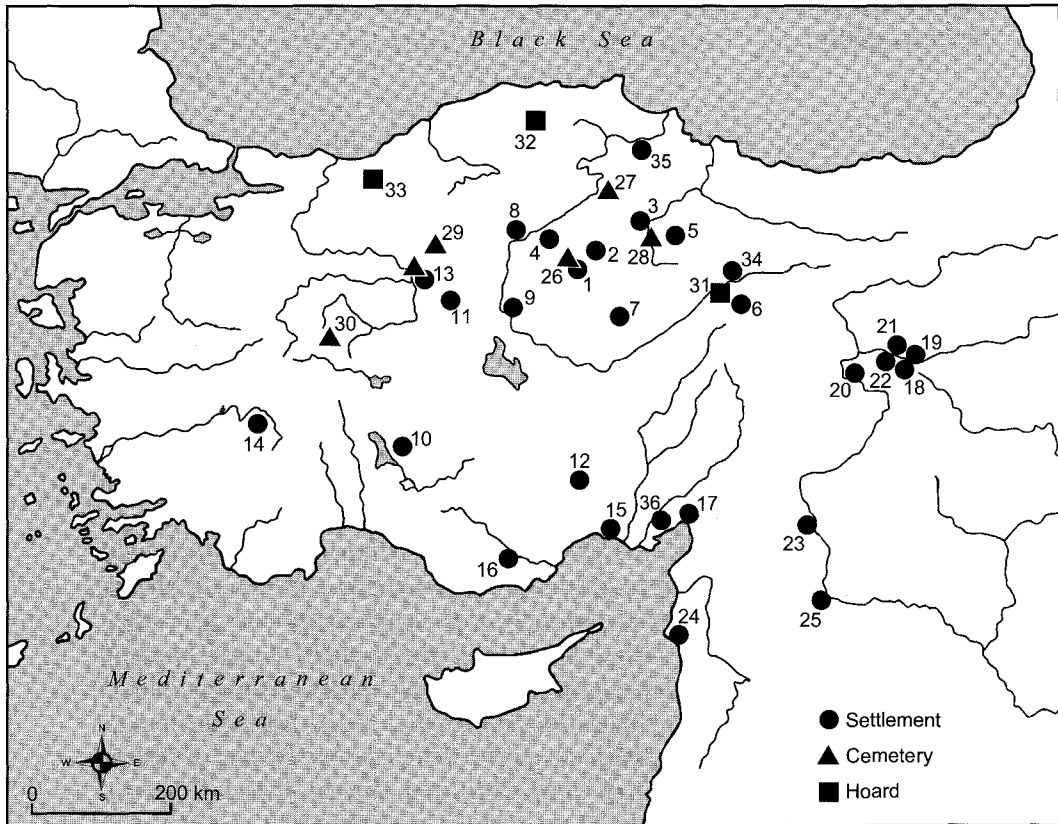


Fig. 1. Map of the Hittite sites (settlements, cemeteries, hoards) mentioned in the text: (1) Boğazköy, (2) Alaca Höyük, (3) Ortaköy, (4) Hüseyindede Tepesi, (5) Maşat Höyük, (6) Kuşaklı, (7) Alishar Höyük, (8) İnandıktepe, (9) Kaman Kalehöyük, (10) Eflatun Pınar, (11) Gavurkalesi, (12) Porsuk, (13) Gordion, (14) Beycesultan, (15) Tarsus, (16) Kilise Tepe, (17) Kinet Höyük, (18) Norşuntepe, (19) Korucutepe, (20) İmikuşağı, (21) Tepecik, (22) Lıdar Höyük, (23) Karkamış, (24) Ugarit, (25) Emar, (26) Osmankayası, (27) Büğet/ Ferzant, (28) Kazankaya, (29) Ilıca, (30) Yanarlar, (31) Şarkışla, (32) Kastamonu, (33) Bolu, (34) Kayalıpınar, (35) Oymaağaç, (36) Sirkeli Höyük (D.P. Mielke).

The heartland of the Hittites is situated in Central Anatolia, primarily in the bent of the Kızılırmak River. Here, in the province of Çorum, is situated Boğazköy, where the vast ruins of the Hittite capital of Hattuşa are found. First soundings were undertaken in 1893 and 1894 by Chantre. In 1906, 1907, 1911 and 1912, between 1931 and 1938, and from 1952 onwards, excavations were conducted by the German Archaeological Institute, partly in co-operation with the German Oriental Society.¹⁰ The site was occupied throughout the Hittite period and is to date the most extensively excavated Hittite site. The state of Hittite research is still dominated by the results produced by the excavations at Boğazköy. This has sometimes led to problems, especially with chronology, as results obtained in the capital have been transferred uncritically to other regions of Anatolia. It is only in the recent past that a different approach has been adopted, one which focuses more on recognising regional developments of different sites.¹¹ Recent excavations at Boğazköy focused on topics which were largely ignored in the past, such as the Hittites' management of resources.

The site of Alaca Höyük, also situated in the province of Çorum only 25 km north-east of the capital, witnessed a stratigraphic interpretation independent from Boğazköy. First excavations were conducted by T. Makridy in 1907; later, a major excavation was undertaken between 1935 and 1983 by H. Koşay, R.O. Arık and M. Akok. A. Çınaroğlu began new excavations in 1998.¹² Evidence for all Hittite periods seems to be present. A problem is the fact that the publications of the older excavations do not allow a correlation of the objects with the stratigraphy, which severely limits their value. Furthermore, many groups of objects were published only selectively. In contrast the detailed architectural reconstructions, drawn by Akok, provide an excellent picture of Hittite architecture of this site.

Ortaköy is a new excavation site in the province of Çorum. Excavations were carried out from 1990 onwards and revealed large public buildings with exceptionally rich finds and many cuneiform tablets in Hittite and Hurrian, dating to the Middle Hittite period.¹³ According to the cuneiform tablets, the

¹⁰ From the vast amount of literature only some general overviews will be listed here: Bittel 1983a (with extensive bibliography); Neve 1996; Seeher 1999; 2002a. The preliminary reports were first published in *MDOG* (1932-1974); from 1979 they appear in *AA*. For up-to-date information, consult the project homepage: http://www.dainst.org/index_643_de.html.

¹¹ In November of 2004 a workshop entitled 'Structuring and Dating in Hittite Archaeology' was held in Istanbul. It specifically dealt with these problems (see Mielke *et al.* 2006.)

¹² For a summary, see Özgüç 2002a with further bibliographical references. The results of the new excavations are published in *KST* 21.1 (2000) and the following volumes. A new interpretation of the chronology of the site was proposed by T. Özgüç 1993, 473-74.

¹³ A. Süel 1998; 2001; 2002; M. Süel 2001. Excavation reports in Turkish are published in *KST*.

site can be identified as Šapinuwa – one of the residential cities of the Hittite kings. Unfortunately, little detailed information has been published so far, especially concerning the cuneiform tablets.

Rather well published in contrast are the excavations at Hüseyindede Tepesi, a small mound situated *ca.* 45 km north-west of Boğazköy in the province of Çorum. Excavations began in 1997 by T. Sipahi and T. Yıldırım, which produced parts of a public building from the Old Hittite period, containing an interesting pottery inventory, among which two relief vases need to be mentioned. One of these shows a bull leaping scene.¹⁴

Maşat Höyük is situated further to the east, in the province of Tokat. Excavations took place in 1945 and from 1973 to 1984 under the direction of T. Özgüç. The excavations on the small mound have produced a wealth of information for Hittite studies, including cuneiform tablets, seals and imported Mycenaean pottery.¹⁵ Four building levels – one with an impressive palatial building – were detected, which cover the entire Hittite sequence. According to the texts found the site can be identified as Tapikka.

Further east, in the province of Sivas, the site of Kuşaklı was identified as the Hittite city of Sarissa. Since 1992 excavations with an interdisciplinary approach have been conducted here by A. Müller-Karpe. Besides the discovery of cuneiform tablets, large-scale excavations in combination with an extensive geophysical survey have provided new insights into the architectural layout of Hittite towns.¹⁶

Alişar Höyük in the province of Yozgat represents one of the first systematic excavations in Central Anatolia. The site was excavated between 1926 and 1932 by H.H. von der Osten and E.F. Schmidt.¹⁷ In the publication the entire 2nd millennium from the 20th to the 12th centuries BC was termed ‘Hittite Empire Period’. Further studies, however, have shown that mainly the first half of the 2nd millennium is represented. Thus it remains unclear whether the site can indeed be equated with the Hittite town of Ankuwa, which according to texts still flourished in the Empire period.¹⁸

¹⁴ Yıldırım 2000; Sipahi 2000; 2001. See also the reports in *KST*.

¹⁵ Özgüç 1978; 1982; 2002b (with bibliography).

¹⁶ Preliminary reports have been published in *MDOG* 127 (1995) and following volumes under the general authorship of Müller-Karpe but with numerous individual contributions. For a general overview, see Müller-Karpe 2002. Further information can be found on the project’s web-site: www.uni-marburg.de/~kusakli.

¹⁷ von der Osten 1937.

¹⁸ For a new evaluation of Alişar in the 2nd millennium BC, see Gorny 1995. This article is a summary of Gorny’s dissertation, which unfortunately remains unpublished. However, Gorny’s chronological evaluations need to be adjusted according to the new chronological interpretations at Boğazköy.

İnandıktepe, which was investigated in 1966 and 1967 by R. Temizer and published in 1988 by Özgüç, is situated west of the Kızılırmak River in the province of Çankırı.¹⁹ Parts of a building complex from the Old Hittite period were discovered, containing a remarkable ceramic inventory, including the already famous relief vase. The architectural remains originally were thought to represent a temple, but an interpretation as a mansion is more likely.²⁰

For future interpretations the recently started excavation on the Höyük of Kayalıpınar will be important.²¹ The site is located west of Sivas on the banks of the Kızılırmak and has already produced several strata, which seem to cover the entire Hittite and even the Karum period. Noteworthy are fragments of cuneiform tablets as well as a relief depicting a seated deity.

On account of the find of some fragments of cuneiform tablets, the new survey and excavation project at Oymağaç Höyük near Vezirköprü in the province of Samsun must also be mentioned. The excavation team identified the huge settlement with the Old Hittite city of Nerik.²²

A steadily growing importance has the site of Kaman Kalehöyük in the province of Kırşehir. The site is being excavated by a Japanese team under the direction of S. Omura since 1986.²³ The careful stratigraphic excavations have not yet exposed larger areas, but the continuous sequences of levels are of prime importance for the archaeological chronology of the first half of the 2nd millennium BC. However, similar to the case of Alişar it is not clear whether the site was occupied in the Empire period.²⁴

The open-air sanctuary of Eflatun Pınar in the province of Konya, which had already received a lot of attention, has revealed fascinating new results due to the excavations conducted since 1996 by S. Özenir.²⁵

Also Gavurkalesi, situated in the province of Ankara, has been known for a long time as a site of an obviously cultic character. The site was first explored by von der Osten in 1930; more recent investigations were undertaken by S. Lumsden in 1993 and 1994.²⁶

¹⁹ Özgüç 1988.

²⁰ For a discussion of the function of the building, see Mielke 2006b, 254-55; see also Mielke in this volume, p. 167.

²¹ Müller-Karpe 2000; 2006.

²² <http://www.nerik.de>.

²³ The results of the excavations are published in the series *Kaman-Kalehöyük = Anatolian Archaeological Studies*, published from vol. 9 (2000) in English (the earlier volumes are in Japanese). Shorter summaries in English are published in the series *BMECCJ*.

²⁴ In the publications the term 'Hittite Empire' is used for Level IIIa (Omura 2002, 5), but so far no material typical for the Empire period has been published. For a discussion of the pottery, see Katsuno 2006.

²⁵ Özenir 2001; Bachmann and Özenir 2004. See also Ökse in this volume, pp. 222-25.

²⁶ Lumsden 2002. See also Ökse in this volume, p. 232.

The Höyük of Porsuk in the province of Niğde is situated on the northern slopes of the Taurus, controlling the important route through the Cilician Gates. The site was excavated from 1969 to 1977, from 1986 to 1989, and again from 2002 onwards by a French team.²⁷ Hittite occupation is attested from the Old Hittite (Level VI – ‘ancien royaume hittite’) to the Empire period (Level V – ‘hittite impérial’), but so far a detailed evaluation of the relationship between the finds and the stratigraphy is lacking.²⁸

In the western part of Central Anatolia only a few Hittite sites have been explored so far. This situation is especially unfortunate since in this region the western border of the Hittite realm has to be sought. Gordion is situated in the province of Ankara. Late Bronze Age material was first encountered in the excavations undertaken by R.S. Young between 1950 and 1973. Besides occupation levels on the hill of Yassihöyük²⁹ a cemetery which covered the period from the Middle Bronze Age to the Old Hittite period was detected on the north-eastern ridge.³⁰ New excavations directed by M.M. Voigt in 1988-1989 distinguished two Late Bronze Age levels on the hill of Yassihöyük (YHSS 9 and 8), the latter definitely belonging to the Empire period.³¹

In the south-west, along an old channel of the Meander, the impressive Höyük of Beycesultan (province of Denizli) is situated. Excavations were conducted from 1954 to 1959 under the direction of S. Lloyd.³² Levels III-I were attributed to the Late Bronze Age. The archaeological material, especially the pottery, shows a local south-west Anatolian character. Only in Level Ib does Hittite influence show up in the pottery. The absolute dates suggested for these levels are speculative at best and need to be reinvestigated.³³

Important sites for Hittite archaeology are also found south of the Taurus Mountains in Cilicia. Investigations of these sites provided important results, as they often contain Hittite material alongside objects from other regions, and thus allow synchronisations between Hittite and other cultures, which due to the lack of larger numbers of imported objects cannot be obtained in Central Anatolia.

Among the earliest excavations in this region the investigations at the site of Tarsus in the province of İçel have to be mentioned. H. Goldman excavated it from 1934 to 1948.³⁴ While the LB I levels clearly show a locally derived

²⁷ Dupré 1983; Pelon *et al.* 1992; Pelon 2003; Beyer 2004 (with extensive bibliography).

²⁸ The earliest settlement activities are placed by dendrochronological investigations to the middle of the 16th century BC (Kuniholm *et al.* 1992; 2005, 45; Mielke 2006a, 87-88).

²⁹ Gunter 1991; 2006.

³⁰ Mellink 1956.

³¹ Henrickson 1994, 105-06; Voigt 1994, 266-67.

³² Lloyd 1972; Mellaart and Murray 1995; Mellaart 1998 (with bibliography).

³³ Mellaart and Murray 1995, 93-98.

³⁴ Goldman 1956.

assemblage, LB IIa definitely exhibits Hittite influence in the architecture, the pottery and other finds such as seals. LB IIb levels already contain Late Helladic IIIc pottery, thus postdating the period of the Hittite empire. Since 2001 a new interdisciplinary project under the direction of Aslı Özyar has been underway.³⁵

Also situated in the in province of İçel is Kilise Tepe, excavated between 1994 and 1998 by J.N. Postgate. The site contained at least five phases covering the entire Late Bronze Age. As well as the short summaries available hitherto, a comprehensive publication has now appeared.³⁶ The site of Sirkeli Höyük is most famous for the rock reliefs depicting Muwatalli II and another unidentified king. Since 2006 excavation in the adjacent settlement has resumed.³⁷

Although small, the excavations at Kinet Höyük in eastern Cilicia in the province of Adana have provided an important Late Bronze Age sequence. The investigations began in 1991 under the direction of M.-H. Gates.³⁸ The Late Bronze Age is represented by periods 15, 14 and 13 in the western part of the mound and covers a period from the 16th to the end of the 13th centuries B.C. The material culture of all periods, especially the pottery, shows strong Hittite influence.³⁹

Excavations at sites in south-eastern Anatolia demonstrate a mixture of Hittite and local elements. Hittite influence on the material culture seems to have varied according to political conditions.

One of the more impressive Höyüks in this region is Norşuntepe in the province of Elazığ. The site was investigated by H. Hauptmann between 1968 and 1974.⁴⁰ Layers 4-3 represent the Late Bronze Age occupation levels, which are restricted to the summit and the south terrace of the site. Although the pottery betrays strong Hittite influence in the shapes, the chaff tempering frequently attested at the site is a feature unknown to Hittite pottery from Central Anatolia.⁴¹

Another important place is Korucutepe, situated on the Plain of Altınova (province of Elazığ), which was excavated between 1968 and 1970 by M.N. van Loon and again from 1972 to 1975 by H. Ertem.⁴² The excavated sequence covers the entire Late Bronze Age showing strong Hittite influence in pottery and architecture.

³⁵ Özyar 2005.

³⁶ Postgate 1998; Symington 2001; Postgate and Thomas 2007.

³⁷ Ahrens *et al.* 2008. See also the project web-site: <http://sirkeli-project.info>.

³⁸ Gates 1999; 2001; 2006.

³⁹ Gates 2001.

⁴⁰ Hauptmann 1969-70; Korbelt 1985; Schmidt 2002.

⁴¹ Korbelt 1985, 124.

⁴² van Loon 1978, 1980; Ertem 1988; Umurtak 1996.

One of the more recent projects in this region is İmikuşağı (province of Elazığ), which was investigated by V. Sevin from 1981 to 1986.⁴³ From level 10 onwards, which dates to the Old Hittite period, a strong Hittite influence is noticeable, which continues into the later levels 9-7. The pottery shows an interesting combination of Hittite and local south-eastern elements, which is reflected in the painted decoration.⁴⁴

Further important sites in this region are Tepecik (province of Elazığ)⁴⁵ and Lidar Höyük (province of Urfa).⁴⁶ Unfortunately no detailed studies of Late Bronze Age levels and finds have been published yet for either site.

In Syria Hittite influence can be grasped only from political and historical documents, while cultural influence in the archaeological material is rarely attested.⁴⁷

For the Hittites the most important site in this region without doubt was Karkamiš, nowadays situated right on the Turkish-Syrian border. The site was excavated from 1878 to 1881 by P. Henderson and from 1911 to 1914 by D.G. Hogarth, C. Thompson and C.L. (Sir Leonard) Woolley. Unfortunately the excavations did not reach Late Bronze Age levels. Karkamiš played an important role in Hittite history, as after the conquest by Šuppiluliuma I it became the seat of a Hittite viceroy, who was responsible for governing the Syrian territories. Obviously a Hittite dynasty stayed in power at the site even after the end of the Hittite empire.⁴⁸

A French mission has been examining the important trading centre of Ugarit in the district of Latakia, Syria since 1929. The excavations have uncovered large parts of the Late Bronze Age city.⁴⁹ Hittite finds were surprisingly rare, and it is mainly the evidence from the extensive cuneiform archives which vividly illustrate the relations of this city with the Hittites.⁵⁰

Emar, situated on the Euphrates in Syria, was excavated by a French team under the direction of J.-C. Margueron between 1972 and 1976. Excavations were renewed in 1992 by the Syrian Department of Antiquities and Aleppo University, joined since 1996 by U. Finkbeiner from Tübingen University. The site represents a typical Syrian town, which came under Hittite rule at the beginning of the Empire period. While the cuneiform tablets shed interesting

⁴³ Sevin 1995, 7-8; Konyar 2006. Excavation reports are published in *KST* 4 (1983) – 9 (1987).

⁴⁴ For an excellent study of the pottery from the Old Hittite levels, see Konyar 2002.

⁴⁵ For an overview, see Esin 1982.

⁴⁶ Littauer *et al.* 1991; Müller 2003, 138.

⁴⁷ Genz 2006.

⁴⁸ Klengel 2002; Hawkins 1988.

⁴⁹ Yon 2006.

⁵⁰ See various contributions in Watson and Wyatt 1999.

light on Hittite administrative practices, little Hittite influence can be traced in the material culture.⁵¹

SURVEY WORK

Many surveys have been conducted in Central Anatolia, such as the already famous 'Explorations in Hittite Asia Minor/Central Anatolia' (1927-1929) by von der Osten, which resulted in the excavation of Alişar Höyük.⁵² Unfortunately, most surveys have recorded just the presence of archaeological sites,⁵³ few going beyond a chronological assessment of the finds towards an analysis of settlement patterns and a reconstruction of ancient land use. For the Hittite period promising attempts have been made by a few survey projects. Among them the surveys conducted by A. Tuba Ökse since 1992 along the upper Kızılırmak River in the province of Sivas should be mentioned.⁵⁴ Intensive studies on the material provided important insights in Hittite history, ranging from problems of settlement geography to the reconstruction of administrative units.

The Paphlagonia Survey in the province of Çankırı was conducted between 1997 and 2001 by R. Matthews.⁵⁵ For the Late Bronze Age the main result was to detect larger fortified sites in strategic locations, which undoubtedly reflect the position of the region as a border zone to the Kaška lands in the north.

Parallel to the excavations at Kaman Kalehöyük, the Middle Eastern Culture Center in Japan has conducted the 'General Survey in Central Anatolia' since 1986 under the direction of S. Omura.⁵⁶ Short summaries of the yearly campaigns provide overviews of especially the central and south-western regions of Central Anatolia. A detailed study of the vast amount of material for the Hittite period is still lacking, however.

The detailed description of the borders of Tarḫuntašša provided on the bronze tablet from Boğazköy⁵⁷ led to the Tarḫuntašša Survey of 1998.⁵⁸ This unique situation allowed the borders of this Hittite appanage kingdom to be

⁵¹ Adamthwaite 2001; Faist and Finkbeiner 2002.

⁵² See Schede 1932.

⁵³ An overview of the large number of survey projects can be found in the Hittite bibliography by Souček and Siegelová (1996, 174-97), as well as in the annual survey reports AST.

⁵⁴ Ökse 2000; 2001.

⁵⁵ Matthews *et al.* 1998; Glatz and Matthews 2005; Matthews and Glatz 2009.

⁵⁶ As for the excavations, the survey reports are published annually in the series *Kaman-Kalehöyük = Anatolian Archaeological Studies* (see above n. 23).

⁵⁷ Otten 1988.

⁵⁸ Dinçol *et al.* 2000.

fixed with reasonable clarity in the actual landscape, while the likeliest site for the location of the capital is Kızıldağ near Karaman.

Graves, Hoards and Single Finds

Hittite cemeteries are encountered with surprising rarity, especially when compared with the large number of settlements (Fig. 1). The reasons for the general lack of Hittite burials remain unknown. Apart from Osmankayası near Boğazköy only Ferzant/Büget and Kazankaya produced Hittite cemeteries in the Hittite heartland, further to the west Ilica, Gordion and Yanarlar need to be named.⁵⁹ Most of these cemeteries are rather small and date to the first half of the 2nd millennium, thus leaving almost no evidence for burials from the Empire period. As detailed surveys of their immediate surroundings were conducted for several settlements without providing any evidence for Hittite cemeteries,⁶⁰ one could speculate that specific burial customs may have existed, which left no recognisable traces in the archaeological record. Hints in this direction may be found in written sources, which describe the burial ceremonies for a Hittite king,⁶¹ or otherwise mention rock-crest houses as burial places.⁶² However, the state of research does not allow any definite conclusions.

Hoard of metal objects represent another important category of archaeological finds. Again the number of hoards is surprisingly small (Fig. 1); furthermore, a detailed study of the material to identify possible Hittite characteristics of these deposits is lacking. Important hoards are known from Şarkışla, Kastamonu and Bolu,⁶³ but objects from the Schimmel Collection are said to have originated from hoards.⁶⁴

Lastly, we should mention single finds, often the source of valuable insights, such as a stele with a libation scene recently discovered at Altınyayla, where it was used in secondary context as a grave stone in a modern cemetery.⁶⁵ Even new rock reliefs are still being discovered, as evidenced by a newly found example from Hatip⁶⁶ and the inscription at Suratkaya in the Latmos Mountains.⁶⁷

⁵⁹ For an overview, see Emre 1991.

⁶⁰ Especially in Boğazköy and Kuşaklı. See Mielke in this volume, with further references, p. 185.

⁶¹ Otten 1958; further references by Souček and Siegelová 1996, chapter 8.9.

⁶² van den Hout 2002.

⁶³ For the hoards, see Tsumoto in this volume with further references, pp. 283–84.

⁶⁴ Muscarella 1974, nos. 123–128. However, it has to be noted that objects deriving from illegal excavations are often provided with false provenances.

⁶⁵ Müller-Karpe 2003a.

⁶⁶ Dinçol 1998.

⁶⁷ Peschlow-Bindokat 2001.

WRITTEN SOURCES

Written sources are of prime importance for the study of the Hittites.⁶⁸ So far only five sites in Central Anatolia have produced larger archives of cuneiform tablets from the Hittite period, namely Boğazköy,⁶⁹ Maşat Höyük,⁷⁰ Ortaköy,⁷¹ Kuşaklı⁷² and, recently, Kayalıpınar.⁷³ Besides these, only single fragments are known from a few other sites in Central Anatolia. Further Hittite texts were found at sites in Syria such as Ugarit, Emar and Alalaḫ. While these sources cover a wide variety of topics, they still do not furnish a complete picture of all aspects of Hittite life, as the majority of them are ritual texts, whereas legal and historical texts are less common, and economic/commercial texts are almost completely absent. This situation is clearly illuminated by a statement by H.-G. Güterbock: 'In the excavations at Boğazköy it became a bitter joke that whenever the archaeologists wanted to know what a fragment, found in an archaeologically interesting spot, might contain, the philologist would, in nine of ten cases, have to say: *ein Festritual*.'⁷⁴ Besides the cuneiform archives large monumental inscriptions on stone in Luwian hieroglyphs are also found. This hieroglyphic script was also used on seals, which are not only preserved as original objects but also as impressions on clay bullae, which form an important source for the study of Hittite history.

As a detailed study of written sources by T.P.J. van den Hout is contained in this book, only one additional aspect will be dealt with here – concerning the problems of correlation between historical and archaeological sources. Often destruction levels encountered at sites are equated with events known from historical sources, but in most of the cases no actual proof of these links is found.⁷⁵ Almost every destruction level encountered in the northern part of the Hittite realm is automatically attributed to the Kaškans, but Hittite sources refer as well to internal troubles, not to mention the fact that not every destruction can be explained by war. Ordinary conflagrations must surely have taken their toll as well. Further problems are encountered when trying to equate archaeological objects with Hittite terms found in the texts, such as buildings,

⁶⁸ For this topic, see the short introduction by Bryce (1998, 416-27: Appendix 2. Sources for Hittite History: An Overview). For the remarks following, see the map (fig. 5) in the contribution by van den Hout in the present volume.

⁶⁹ Seeher 2003.

⁷⁰ Alp 1991; Klinger 1995.

⁷¹ Ünal 1998; Stiel 2001.

⁷² Wilhelm 1997.

⁷³ Müller-Karpe 2000; Rieken 2006.

⁷⁴ Güterbock 1970, 175.

⁷⁵ See Seeher 2001 for the problems related to the destruction of Hattuša at the end of the Empire period.

vessels or tools.⁷⁶ These difficulties probably can be explained by the fact that the nature of Hittite written sources enables only limited insights into the mental world of the Hittites.

PROBLEMS IN CURRENT RESEARCH

Problems in current research are manifold and extend from the complex questions of chronology and Hittite geography to many individual aspects such as the end of the empire. A crucial problem is related to the fact that often fundamental questions have not been dealt with extensively from an archaeological point of view: the results of many excavations have been published just as mere catalogues, which still have to be interpreted in their proper context. On the other hand, many of the traditional interpretations concerning excavation results are already outdated and definitely need to be revised and updated in the light of new discoveries.⁷⁷ Due to new excavations and the application of new methods archaeological research is in constant transition, hence the need to update and revise old models.

CHRONOLOGY

Hittite chronology is based on a complex system of written (Fig. 2) and archaeological data and their interpretation. Amazingly little attention is paid to the actual foundations of the chronological systems, which may be related to the fact that the historical as well as the archaeological data permit surprisingly few synchronisms to be drawn between Hittite Anatolia and other regions of the Near East.

The framework for all chronological studies certainly rests on a study of the political history and a reconstruction of a complete list of kings.⁷⁸ As in Egypt the number of throne names for the reigning Hittite kings is limited, thus several rulers bore the same names. In contrast to other civilisations of the ancient Near East, the Hittites did not compile lists of their kings. The current list of Hittite rulers is the result of a meticulous study based on offering lists and genealogical information, often found on seals. It is thanks especially to the information about filiations that the many *Ḫattušilis* or *Tuthaliyas* can be distinguished. But even here stumbling blocks are encountered: two of

⁷⁶ Ünal 1993, 117-18.

⁷⁷ For this problem, see especially Mielke *et al.* 2006.

⁷⁸ For an introduction into the problem, see Bryce 1998, 408-15 (Appendix 1: Chronology) and Beckman 2000.

List of Hittite Kings According to Beckman 2000	Synchronisms	Absolute Chronology	Periodisation Klengel Bryce 1999 1998
0. Ḫuzziya			O L D P E R I O D O L D K I N G D O M
1. Labarna (son of 0)			
2. Ḫattušili I (nephew of 1)			
3. Muršili I Sack of Babylon 1651/1595/1531 (grandson of 2)			
4. Ḫantili I (brother-in-law of 3)			
5. Zidanta I (son-in-law 4?)			
6. Ammuna (son of 5)			
7. Ḫuzziya I (son of 6?)			
8. Telipinu (brother-in-law of 7)			
9. Taḫurwaili			
10. Alluwamna (son-in-law of 8)			M I D D L E
11. Ḫantili II (son of 10)			
12. Zidanta II			
13. Ḫuzziya II (son of 12?)			
14. Muwatalli I			
15. Tuthaliya I (son of 13)			P E R I O D
16. Arnuwanda I (son-in-law of 15)			
17. Tuthaliya II (son of 16)			
18. Tuthaliya III (son of 17)			
19. Šuppiluliuma I Dispatch to the Pharaoh Ḫuriya (Smenkhkare?) 1338 (son of 17) <i>daḫamunzu</i> episode 1323			G R E A T E M P I R E N E W K I N G D O M
20. Arnuwanda II (son of 19)			
21. Muršili II Eclipse? (omen of the sun) on a campaign against Azzi 1322 (son of 19)			
22. Muwatalli II Battle of Qadeš 1275 (son of 21)			
23. Muršili III = Urḫi-Teššub (son of 22)			
24. Ḫattušili III Peace treaty with Egypt. 1258 (son of 21) Marriage between Ramesses II and a daughter of Ḫattušili III 1245			
25. Tuthaliya IV Battle of Niḫriya against Tukulti-Ninurta I of Assyria 1239 (son of 24)			
26. Kurunta = Ulmi-Teššub (son of 22?)			
27. Arnuwanda III (son of 25)			
28. Šuppiluliuma II (son of 25)			
. . . . Ramesses III mentioned in an inscription the destruction of the land of Ḫatti. . . . 1175			

Fig. 2. Overview of Hittite chronology, including list of Hittite kings, important synchronisms, absolute dates and periodisations (D.P. Mielke).

the three Arnuwandas had a father named Tuthaliya. Here the method of text-dating used since the 1970s can help in establishing dates for the different sources.⁷⁹ After decades of research a more or less satisfactory consensus concerning the list of kings seems to have been reached, but some kings and details are still being debated.⁸⁰

Kings and historical events can thus be arranged in a relative sequence. For the establishment of absolute dates events with an exact known date are needed. Unfortunately the Hittites did not develop a chronological system of their own. This is quite astonishing, since Hittite society was as developed and complex as contemporaneous societies in Egypt and Mesopotamia which did employ such systems.⁸¹ Furthermore, no building inscriptions or other monuments providing absolute dates are known from the Hittite realm. Thus, the reigns of several Hittite kings can be calculated only approximately from indirect references, but for the majority of the kings even this is not possible. To get an approximate idea about the chronological dimension in Hittite history generation counts have been used.⁸² The generation intervals, however, are not only determined by biological, but also by cultural factors. Moreover, the complex relations between the Hittite kings have to be taken into account. Thus we are left with a period of 20 to 30 years for one generation, which leaves quite a large margin for absolute dating.

Although synchronisms with other regions are attested in Hittite history,⁸³ such as the conquest of Babylon by Muršili I, these events belong to periods that are a 'Dark Age' for Mesopotamia itself.⁸⁴ The absolute chronology around the middle of the 2nd millennium in the Near East is still floating. Traditionally, the so-called 'Venus dates' were used to establish an absolute date for this period⁸⁵ – this is a star constellation reported for the eighth year of the Babylonian king Ammisaduqa. But also in this case the possibilities for establishing an absolute date are limited, as several different absolute dates have been proposed for this phenomenon. Three different chronological systems have thus been proposed, which are known as the high, middle or low chronology.

⁷⁹ Bryce 1998, 414-15.

⁸⁰ Compare the lists of kings given by Bryce 1998, xiii; Beckman 2000, 26 (with extensive information on the filiations); Wilhelm 2004, 76. See also Dinçol 2006 for the discussion of several problems.

⁸¹ Nissen 1999, 16. Beckman (2000, 20) suggested that such information may have been recorded on wooden tablets which did not survive in the archaeological record. However, the complete lack of any hints on the clay tablets concerning the existence of such a system still remains puzzling.

⁸² Wilhelm 2004; Beckman 2000, 24-25.

⁸³ Beckman 2000, 22-24 with chart 2; Klengel 1999, 388-90.

⁸⁴ See the recent publication edited by Hunger and Pruzsinszky 2004.

⁸⁵ Nissen 1999, 17.

Accordingly, the conquest of Babylon by Muršili can be dated to 1651, 1595 or 1531 BC. As the text mentioning the Venus dates is highly problematic, these dates are less favoured nowadays as a chronological anchor.⁸⁶ Even the synchronisms with Egypt reported from the period of Šuppiluliuma I onwards are problematic, since the Egyptian absolute chronology for this period is not reliable in all respects either.⁸⁷ Nevertheless, it has to be recorded that Hittite history between the 14th and the 12th century BC can be bound to supra-regional chronologies more safely by synchronisms with Egypt and Assyria than the periods before. Recently, even an ultra-short chronology was proposed, based on a study of Babylonian pottery, according to which the conquest of Babylon was dated to 1499 BC.⁸⁸ However, from the point of view of Hittite chronology this proposal cannot be accepted, as it would allot too little time for the succession of kings from Muršili down to the end of the Hittite empire.⁸⁹ To sum up, the statement of G. Beckmann still remains valid today: 'The sad truth is that we will never be able to establish a satisfactory absolute chronology for the entire second millennium BC in Anatolia...'⁹⁰

A solution to this dilemma might be offered by dating methods established by natural sciences. Here especially dendrochronology should be mentioned, according to which timber used in buildings can be dated to the absolute year when it was cut, thus also offering a date for associated finds.⁹¹ Although the tireless efforts of P.I. Kuniholm have resulted in the reconstruction of a tree-ring sequence for the Bronze and Iron Ages in Anatolia,⁹² there still exists a gap in the later Iron Age which precludes this sequence from being tied to later tree-ring sequences. Thus an absolute date for this floating sequence can only be established by radiocarbon dating. A recent re-evaluation of the evidence has led to a near-absolute calibration, which reduces the margin to a period of +4/-7 years.⁹³ Regardless of the problems that still affect this particular case, dendrochronology offers the possibility for a new approach to the problem of absolute chronology. It can even be hoped that the still existing gap in the tree-ring sequence might be closed in the near future. The results available by now support the middle chronology or a slightly shortened version of it, which is also favoured for other reasons. A re-evaluation of the archaeological evidence to confirm this outcome is currently under way using radiocarbon dating, but

⁸⁶ Huber 2004; Sassmannshausen 2004, 65.

⁸⁷ See Wilhelm 2004, 72-74.

⁸⁸ Gasche *et al.* 1998.

⁸⁹ See Beckman 2000 with more details.

⁹⁰ Beckman 2000, 19.

⁹¹ For an overview on dendrochronology and Hittite archaeology, see Mielke 2006a.

⁹² Kuniholm *et al.* 2005.

⁹³ Manning *et al.* 2001. Further sampling has supported this new calibration (Manning *et al.* 2003).

unfortunately it does not offer sufficiently precise dates.⁹⁴ Yet the potential value of radiocarbon dating for an independent subdivision of Hittite material culture should not be underestimated.⁹⁵

The dates supplied by natural sciences have clearly demonstrated that in Hittite history, especially for the linkage of historical dates with archaeological discoveries, many of the traditional dates need to be revised.⁹⁶ Here the assumption that historical events leave noticeable traces in the settlement sequences exposed by archaeologists needs to be questioned. Unfortunately, Hittite kings left no building inscriptions, thus the attribution of excavated buildings to certain kings was largely based on guesswork. In spite of this insecurity, several chronological assumptions came to be regarded as proven facts and thus gained wide acceptance. This traditional pseudo-historical chronology in archaeology was challenged only with the growing application of dating methods based on natural sciences such as dendrochronology or radiocarbon dating. A good case study is offered by the treatment of the Upper City chronology in Boğazköy.⁹⁷ Traditionally, the entire building programme of the Upper City was attributed to Tuthaliya IV,⁹⁸ and consequently all material excavated there was dated to the later 13th to early 12th centuries BC. New excavations in the Upper City, as well as excavations in Kuşaklı, now provided dendro- and radiocarbon dates that are much earlier, thus casting severe doubt on the value of the traditional dating.⁹⁹ This re-evaluation of the chronology of the Upper City in Boğazköy gravely affects the dating of the archaeological material found there, especially the pottery. Types traditionally associated with the late Empire period now seem to have started much earlier and a thorough revision of Hittite ceramic chronology is called for.¹⁰⁰ Furthermore, the traditional dating of the temples and their development can no longer be upheld.¹⁰¹

A problem to which little attention has been paid so far is the periodisation of Hittite history (Fig. 2). Two of the more recent standard reference works – Klengel (1999) and Bryce (1998) – use different systems: Klengel uses a tripartite division into Old Kingdom, Middle Kingdom and Empire period, whereas Bryce prefers a division just into an Old and a New Kingdom. Both systems have their justifications. However, especially for the non-specialist, it can be quite confusing that a term such as ‘Empire period’ is used with varying

⁹⁴ Thus Seeher 2002b, 77-78.

⁹⁵ Schoop and Seeher 2006.

⁹⁶ See Mielke *et al.* 2006.

⁹⁷ Seeher 2006.

⁹⁸ Bittel 1984, 15; Neve 1996, 16; 1999, 7, 12-13.

⁹⁹ Seeher 2002b, 69-71; Müller-Karpe 2003b.

¹⁰⁰ See Schoop in this volume.

¹⁰¹ Müller-Karpe 2003b; Zimmer-Vorhaus in this volume.

implications and without any clarifying notes. This is especially grave in the case of Boğazköy. Whereas from the earliest excavations onwards archaeologists distinguished only between the Old Hittite kingdom and the Empire period,¹⁰² philologists preferred a tripartite division based on the palaeographic study of cuneiform script.¹⁰³ Thus there can be chronological differences of up to 100 years, depending on whether the term 'Empire period' is used by an archaeologist or by a philologist. In this volume, too, different usages of terminology will be encountered.

HITTITE GEOGRAPHY

Although many geographical terms for places and regions are known from Hittite sources, few of them can be securely identified, and thus it is no wonder that Hittite geography is controversially discussed and is under constant revision. Of the places recorded for Central Anatolia, only Ḫattuša (Boğazköy), Šapinuwa (Ortaköy), Sarissa (Kuşaklı) and Tapikka (Maşat Höyük) can be securely identified with archaeological sites. All other identifications are more or less based on assumptions. The positioning of regional geographical terms, however, has made great progress in recent years. Compared with the situation in 1959,¹⁰⁴ many more can be placed with greater security. This is due mainly to the discovery and publication of new texts, such as the bronze tablet from Boğazköy, which describes the borders of Tarḫuntašša,¹⁰⁵ the Yalburt inscription,¹⁰⁶ or the identification of the Karabel inscription as defining the northern border of the kingdom of Mira.¹⁰⁷ The exact position of many terms remains unclear, however, thus detailed reconstructions such as the one put forward for western Anatolia by F. Starke,¹⁰⁸ while not necessarily wrong, must remain to a large extent hypothetical.

END OF THE HITTITE EMPIRE

Current research also sheds new light on the end of the Hittite empire. The crisis that led to the collapse of many Late Bronze Age states in the eastern Mediterranean and the Near East shortly after 1200 BC also affected Central Anatolia. The last attested Hittite king, Šuppiluliuma II, reigned until the early

¹⁰² Thus Neve 1999, 12, Tab. 1b; Secher 1999, 159-67.

¹⁰³ Klengel 1999, 85. See also Neu 2001, 4-5.

¹⁰⁴ Gurney and Garstang 1959.

¹⁰⁵ Otten 1988. See also Dinçol *et al.* 2000.

¹⁰⁶ Poetto 1993.

¹⁰⁷ Hawkins 1998.

¹⁰⁸ Starke 1997.

years of the 12th century BC, and then the Hittite empire disappeared from the historical records. Hittite sources give no direct information as to the causes of the collapse of the empire. In other regions of the eastern Mediterranean the destruction of many cities and the decline of the Late Bronze Age culture in general are attributed to the ‘Sea Peoples’, who are mentioned in Egyptian records.¹⁰⁹ It is thus no wonder that the Sea Peoples were also held responsible for the collapse of the Hittite empire.¹¹⁰ Already in 1983 K. Bittel had pointed out that there was no compelling evidence that the destruction of Ḫattuša and other Hittite sites in Central Anatolia must be attributed to foreign invaders.¹¹¹ Newly discovered historical sources call for a different scenario. Internal problems, such as the conflict between two different lines of the royal family which may have resulted eventually in a civil war, are nowadays seen as one of the main reasons for the downfall of the Hittite empire.¹¹² Also archaeological investigations at Ḫattuša have produced some evidence of decline during the reign of the last Hittite kings, thus showing that the collapse of the Hittite empire is not to be attributed to a sudden catastrophe, but rather had a long and complicated history.¹¹³ In Central Anatolia all traces of Hittite presence disappeared with the collapse of the empire shortly after 1200 BC. It was only in south-eastern Anatolia and northern Syria, in the area of the Neo-Hittite states, that Hittite culture managed to survive into the Iron Age.¹¹⁴

NEW DEVELOPMENTS AND PERSPECTIVES IN HITTITE RESEARCH

Until recently the main focus of excavations was on exposing monumental buildings or discovering works of art as well as archives of clay tablets. Only in the past two decades have new research objectives been considered, such as the social organisation especially of Hittite urban sites and environmental studies.

The understanding of the principles of organisation and the actual functioning of Hittite cities has made great progress with the discovery of storage facilities at Boğazköy and Kuşaklı as well as on other sites.¹¹⁵ Water management is another important aspect for understanding the organisation principles of

¹⁰⁹ Edel 1985.

¹¹⁰ Most recently expressed by Schachermeyer 1986, 342–44.

¹¹¹ Bittel 1983b.

¹¹² Hoffner 1992, 49; Güterbock 1992, 55; Sørenhagen 1996, 286.

¹¹³ Seeher 1998; 2001.

¹¹⁴ Hawkins 2002.

¹¹⁵ Seeher 2000. See also Mielke in this volume, with further references, pp. 176–78.

Hittite cities,¹¹⁶ as shown by the discovery of a number of water ponds at Boğazköy¹¹⁷ and the impressive dams in Kuşaklı¹¹⁸ and Karakuyu.¹¹⁹ An investigation of domestic dwellings is urgently needed, as is the excavation of rural sites. All these points will no doubt lead to a new understanding of Hittite society, settlement patterns and economy.

Environmental studies such as archaeobotany, palynology and archaeozoology not only provide insights into the climatic conditions and the natural vegetation of the Late Bronze Age in Central Anatolia, they also shed light on Hittite agricultural practices and land use.¹²⁰

The investigation of the regional characteristics of Hittite culture is still in its infancy, as outlined above in the discussion of the more important Hittite sites. Hittite foreign relations is a field of study that still has not yielded all its secrets.¹²¹

To conclude, it has to be stated that Hittite Studies are slowly emerging from their somewhat splendid isolation, not only for neighbouring disciplines but also for the general public. As Hittite history can be fully understood only in its general Near Eastern and Mediterranean context, this development is quite encouraging for the future.

USEFUL SOURCES FOR HITTITE RESEARCH

The study of the Hittites is a fast-evolving and constantly changing discipline. The number of publications is immense and it is therefore not easy to get an overview, especially of newer trends and developments. The *Historical Dictionary of the Hittites* by C. Burney can serve for quick reference on specific questions.¹²² For more detailed questions a useful *Hittite Bibliography* containing all the older literature up to 1995 was compiled by V. Souček and J. Siegelová.¹²³

Summaries of ongoing archaeological excavations can be found in yearly reports under the title 'Archaeology in Turkey' compiled by M.J. Mellink for the *AJA* from 1955 until 1993 (volumes 59-97). Between 1994 and 1997 these

¹¹⁶ Hüser 2007.

¹¹⁷ Seeher 2002b.

¹¹⁸ Hüser 2004; 2007.

¹¹⁹ Emre 1993.

¹²⁰ Dörfler *et al.* 2000. See also Dörfler *et al.* in this volume; von den Driesch and Pöllath 2004.

¹²¹ For an overview on this topic, see the contribution by Genz in this volume, pp. 301-31.

¹²² Burney 2004.

¹²³ Souček and Siegelová 1996.

reports were continued by M.-H. Gates in the same journal. From 2001 to 2004 A.M. Greaves and B. Helwing took over the compilation of these reports, which appeared again in the *AJA* and, from 2003, simultaneously in the Turkish journal *TÜBA-AR*. The latest issue, covering the archaeological investigations of 2004 and 2005 was prepared by B. Yıldırım and, once again, M.-H. Gates, appearing in *AJA* in 2007.

Equally useful annual reports of archaeological projects are published in the proceedings of the yearly symposia from 1980 onwards in the series *Kazı Sonuçları Toplantısı* for excavation projects, and from 1984 onwards in the series *Araştırma Sonuçları Toplantısı* for survey projects.

Every three years an international Congress of Hittitology is organised, alternating between Çorum in the Hittite heartland and another locality. The first meeting was held in Çorum in 1990,¹²⁴ the following one 1993 in Pavia,¹²⁵ 1996 again in Çorum,¹²⁶ 1999 in Würzburg,¹²⁷ 2002 once again in Çorum,¹²⁸ 2005 in Rome,¹²⁹ and the latest in 2008, yet again in Çorum.

Meanwhile also for Hittite studies the internet has become an important source of information. One of the primary sources is the *Hethiter-Portal Mainz*, which mainly focuses on philology (www.hethiter.net). Besides an impressive bibliography with on-line search facilities, it contains databases for textual sources, special fonts for downloading and other important research tools. For Hittite archaeology a similar web site still is a desideratum.

We hope that this overview will serve as a convenient starting point for in-depth studies of further aspects of Hittite history and archaeology. There still remains a deal of work to be done.

BIBLIOGRAPHY

- Adamthwaite, M.R. 2001: *Late Hittite Emar. The Chronology, Synchronisms and Socio-Political Aspects of a Late Bronze Age Fortress Town (Ancient Near Eastern Studies suppl. 8)* (Louvain).
- Ahrens, A., Kozal, E., Kümmel, C., Laube, I. and Novak, M. 2008: 'Sirkeli Höyük – Kulturkontakte in Kilikien. Vorbericht über die Kampagnen 2006 und 2007 der deutsch-türkischen Mission'. *IstMitt* 58, 67-107.
- Alp, S. 1991: *Hethitische Briefe aus Maşat-Höyük (TTKY VI.35)* (Ankara).

¹²⁴ Alp 1992.

¹²⁵ Carruba *et al.* 1995.

¹²⁶ Alp and Süel 1998.

¹²⁷ Wilhelm 2001.

¹²⁸ A. Süel 2005.

¹²⁹ Archi and Francia 2007-08.

- (ed.) 1992: *Uluslararası 1. Hittitoloji Kongresi Bildirileri (19-21 Temmuz 1990)* (Ankara).
- Alp, S. and Süel, A. (eds.) 1998: *III. Uluslararası Hittitoloji Kongresi Bildirileri, Çorum, 16-22 Eylül 1996/Acts of the IIIrd International Congress of Hittitology, Çorum, September 16-22, 1996* (Ankara).
- Archì, A. and Francia, R. (eds.) 2007-08: *VI Congresso Internazionale di Ittitologia, Roma, 5-9 settembre 2005*, 2 parts (Rome) (= SMEA 49-50).
- Bachmann, M. and Özenir, S. 2004: 'Das Quellheiligtum Eflatun Pınar'. AA, 85-122.
- Beckmann, G. 2000: 'Hittite Chronology'. *Akkadica* 119-120 (= *Just in Time* [Proceedings of the International Colloquium on Ancient Near Eastern Chronology, 2nd Millennium BC, Ghent 7-9 July 2000]), 19-32.
- Beyer, D. 2004: 'Porsuk: Rapport sommaire sur la campagne de fouilles de 2003'. *Anatolia Antiqua* 12, 267-81.
- Bittel, K. 1983a: *Hattuscha. Hauptstadt der Hethiter. Geschichte und Kultur einer altorientalischen Großmacht* (Cologne).
- 1983b: 'Die archäologische Situation in Kleinasien um 1200 v. Chr. und während der nachfolgenden vier Jahrhunderte'. In Deger-Jalkotzy, S. (ed.), *Griechenland, die Ägäis und die Levante während der „Dark Ages“* (Akten des Symposions von Stift Zwettl [NÖ], 11-14 Oktober 1980) (Österreichische Akademie der Wissenschaften, Phil.-Hist. Klasse, Sitzungsberichte 418) (Vienna), 25-65.
- 1984: *Denkmäler eines hethitischen Großkönigs des 13. Jahrhunderts vor Christus*. Gerda Henkel Vorlesung (Opladen).
- Bryce, T.R. 1998: *The Kingdom of the Hittites* (Oxford).
- 2002: *Life and Society in the Hittite World* (Oxford).
- Burney, C. 2004: *Historical Dictionary of the Hittites* (Historical Dictionaries of Ancient Civilizations and Historical Eras 14) (Lanham, MD/Oxford).
- Canpolat, F. (ed.) 2001: *From Boğazköy to Karatepe. Hittitology and the Discovery of the Hittite World/Boğazköy'den Karatepe'ye. Hititbilim ve Hitit Dünyasının Keşfi* (Istanbul).
- Carruba, O., Giorgieri, M. and Mora, C. (eds.) 1995: *Atti del II congresso internazionale di Hittitologia* (Studia Mediterranea 9) (Pavia).
- Ceram, C.W. 1956: *The Secret of the Hittites. The Discovery of an Ancient Empire* (New York).
- Collins, B.J. 2007: *The Hittites and their World* (Archaeology and Biblical Studies 7) (Atlanta).
- Die Hethiter und ihr Reich* 2002: *Die Hethiter und ihr Reich. Das Volk der 1000 Götter* (Bonn).
- Dinçol, A.M. 1998: 'Die Entdeckung des Felsmonuments in Hatip und ihre Auswirkungen über die historischen und geographischen Fragen des Hethiterreiches'. *TÜBA-AR* 1, 27-35.
- Dinçol, A.M., Yakar, J., Dinçol, B. and Taffet, A. 2000: 'The Borders of the Appanage Kingdom of Tarhuntašša – A Geographical and Archaeological Assessment.' *Anatolica* 26, 1-29.
- Dinçol, B. 2006: 'Über die Probleme der absoluten Datierung der Herrschaftsperioden der hethitischen Könige nach den philologischen und glyptischen Quellen'. In Mielke *et al.* 2006, 19-32.
- Dörfler, W., Neef, R. and Pasternak, R. 2000: 'Untersuchungen zur Umweltgeschichte und Agrarökonomie im Einzugsbereich hethitischer Städte'. *MDOG* 132, 367-80.

- Dupré, S. 1983: *Porsuk I. La céramique de l'âge du Bronze et de l'âge du Fer* (Paris).
- Edel, E. 1985: 'Der Seevölkerbericht aus dem 8. Jahre Ramses III'. In *Mélanges G. E. Mokhtar* (Cairo), 223-37.
- Emre, K. 1991: 'Cemeteries of Second Millennium B.C. in Central Anatolia'. In H.I.H. Prince Takihito Mikasa (ed.), *Essays on Ancient Anatolian and Syrian Studies in the 2nd and 1st Millennium B.C.* (BMECCJ 4) (Wiesbaden), 1-15.
- 1993: 'The Hittite dam of Karakuyu'. In H.I.H. Prince Takihito Mikasa (ed.), *Essays on Anatolian Archaeology* (BMECCJ 7) (Wiesbaden), 1-42.
- Ertem, H. 1988: *Korucutepe I: 1973-1975 kazı yıllarında ele geçen Erken Hitit-İmparatorluk Çağı arası buluntuları* (TTKY V.42) (Ankara).
- Esin, U. 1982: 'Tepecik Kazısı, 1974'. In *Keban Project 1974-1975 Activities* (Middle East Technical University Keban Project Publications I.7) (Ankara), 95-118.
- Faist, B. and Finkbeiner, U. 2002: 'Emar'. In *Die Hethiter und ihr Reich 2002*, 190-95.
- Garstang, J. 1929: *The Hittite Empire* (London).
- Gasche, H., Armstrong, J.A., Cole, S.W. and Gurzadyan, V.G. 1998: *Dating the Fall of Babylon. A Reappraisal of Second-Millennium Chronology* (Ghent/Chicago).
- Gates, M.-H. 1999: 'Kinet Höyük in Eastern Cilicia: a Case Study for Acculturation in Ancient Harbours'. *Olba* 2, 303-12.
- 2001: 'Potmarks at Kinet Höyük and the Hittite ceramic industry'. In Jean *et al.* 2001, 137-57.
- 2006: 'Dating the Hittite Levels at Kinet Höyük: a Revised Chronology'. In Mielke *et al.* 2006, 293-309.
- Genz, H. 2006: 'Hethitische Präsenz im spätbronzezeitlichen Syrien: Die archäologische Évidenz'. *BaghdMitt* 37, 499-509.
- Glatz, C. and Matthews, R. 2005: 'Anthropology of a frontier zone: Hittite-Kaska relations in Late Bronze Age North-Central Anatolia'. *BASOR* 339, 21-39.
- Goetze, A. 1933: *Kulturgeschichte Kleinasien* (Handbuch der Altertumswissenschaft III.2) (Munich).
- 1957: *Kulturgeschichte Kleinasien* (Handbuch der Altertumswissenschaft III.2), 2nd ed. (Munich).
- Goldman, H. 1956: *Excavations at Gözlü Kule Tarsus II: From the Neolithic through the Bronze Age* (Princeton).
- Gorny, R.L. 1995: 'Alişar Höyük in the Late Second Millennium B.C.'. In Carruba *et al.* 1995, 159-71.
- Gunter, A.C. 1991: *Gordion Excavation Final Reports III: The Bronze Age* (University of Pennsylvania, University Museum Monograph 71) (Philadelphia).
- 2006: 'Issues in Hittite Ceramic Production: A View from the Western Frontier'. In Mielke *et al.* 2006, 349-63.
- Gurney, O.R. and Garstang, J. 1959: *The Geography of the Hittite Empire* (London).
- Güterbock, H.G. 1970: 'Some Aspects of Hittite Festivals'. In Finet, A. (ed.), *Actes de la XVII^e Rencontre Assyriologique Internationale 1969* (Brussels), 175-80.
- 1992: 'Survival of the Hittite Dynasty'. In Ward, W.A. and Joukowski, M.S. (eds.), *The Crisis Years. The 12th Century B.C. From beyond the Danube to the Tigris* (Dubuque, IA), 53-55.
- Hauptmann, H. 1969-70: 'Norşun-Tepe. Historische Geographie und Ergebnisse der Grabungen 1968/69'. *IstMitt* 19-20, 21-78.
- Hawkins, J.D. 1988: 'Kuzi Teşub and the "Great Kings" of Karkamiş'. *AS* 38, 99-108.

- 1998: 'Tarkasnawa King of Mira: 'Tarkondemos', Boğazköy Sealings and Karabel'. *AS* 48, 1-31.
- 2002: 'Anatolia: The End of the Hittite Empire and After'. In Braun-Holzinger, E.A. and Matthäus, H. (eds.), *Die nahöstlichen Kulturen und Griechenland an der Wende vom 2. zum 1. Jahrtausend v. Chr. Kontinuität und Wandel von Strukturen und Mechanismen kultureller Interaktion* (Kolloquium des Sonderforschungsbereiches 295 'Kulturelle und sprachliche Kontakte' der Johannes Gutenberg-Universität Mainz, 11.-12. Dezember 1998) (Möhnesee), 143-51.
- Henrickson, R.C. 1994: 'Continuity and Discontinuity in the Ceramic Tradition of Gordion during the Iron Age'. In Çilingiroğlu, A. and French, D.H. (eds.), *Anatolian Iron Ages 3* (The Proceedings of the Third Anatolian Iron Ages Colloquium held at Van, 6-12 August 1990) (British Institute of Archaeology at Ankara Monograph 16) (London), 95-129.
- Hoffner, H.A. jr 1992: 'The Last Days of Khattusha'. In Ward, W.A. and Joukowsky, M.S. (eds.), *The Crisis Years. The 12th Century B.C. From beyond the Danube to the Tigris* (Dubuque, IA), 46-52.
- Hrozný, F. [=B.] 1915: 'Die Lösung des hethitischen Problems'. *MDOG* 56, 17-50.
- Huber, P. 2004: 'Astronomy and Ancient Chronology'. In *Akkadica* 119-120 (= *Just in Time* [Proceedings of the International Colloquium on Ancient Near Eastern Chronology, 2nd Millennium BC, Ghent 7-9 July 2000]), 159-76.
- Hunger, H. and Pruzsinszky, R. 2004: *Mesopotamian Dark Age Revisited* (Proceedings of an International Conference of SCIEEM 2000, Vienna, 8th-9th November 2002) (Contributions to the Chronology of the Eastern Mediterranean 6) (Vienna).
- Hüser, A. 2004: 'Untersuchungen am Nordwest-Damm'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 2003'. *MDOG* 136, 158-62.
- 2007: *Hethitisches Anlagen zur Wasserversorgung und Entsorgung* (Kuşaklı-Sarissa 3) (Rahden, Westphalia).
- Jean, É., Dinçol, A.M. and Durugönül, S. (eds.) 2001: *La Cilicie: espaces et pouvoirs locaux (2e millénaire av. J.-C. - 4e siècle ap. J.-C.)* (Actes de la table ronde internationale d'Istanbul, 2-5 novembre 1999)/*Kilikia: mekânlar ve yerel güçler (M.Ö. 2. binyıl-M.S. 4. yüzyıl)* (uluslararası yuvarlak masa toplantısı bildirileri, İstanbul, 2-5 Kasım 1999) (Paris/Istanbul).
- Katsuno, T. 2006: 'Zur Keramik des 2. Jahrtausends v. Chr. von Kaman-Kalehöyük. Ein Beitrag zur Kenntnis der Keramikentwicklung von der "Übergangsperiode" zwischen der Frühen und Mittleren Bronzezeit bis in die Spätbronzezeit'. In Mielke *et al.* 2006, 277-92.
- Klengel, H. 1999: *Geschichte des hethitischen Reiches (HdO Abteilung 1.34)* (Leiden/Boston/Cologne).
- 2002: 'Karkamis in der hethitischen Großreichszeit'. In *Die Hethiter und ihr Reich* 2002, 164-67.
- Klinger, J. 1995: 'Das Corpus der Maşat-Briefe und seine Beziehungen zu den Texten aus Hattuša. *ZAss* 85, 74-108.
- 2007: *Die Hethiter* (Munich).
- Konyar, E. 2002: 'İmikuşağı 10. yapı katı (eski hittit dönemi) çanak çömlekleri'. *Anadolu Araştırmaları* 16, 381-424.
- 2006: 'Old Hittite Presence in the East of the Euphrates in the Light of the Stratigraphical Data from İmikuşağı (Elazığ)'. In Mielke *et al.* 2006, 333-48.
- Korbel, G. 1985: *Die spätbronzezeitliche Keramik von Norsuntepe* (Hanover).

- Kuniholm, P.I., Newton, M.W., Griggs, C.B. and Sullivan, P.J. 2005: 'Dendrochronological Dating in Anatolia: The Second Millennium BC'. In Yalçın, Ü. (ed.), *Anatolian Metal III* (Der Anschnitt Beiheft 18/Veröffentlichungen aus dem Deutschen Bergbau-Museum Bochum 124) (Bochum), 41-47.
- Kuniholm, P.I., Tarter, S.L., Newton, M.W. and Griggs, C.B. 1992: 'Dendrochronological Investigations at Porsuk/Uluğışla, Turkey. Preliminary Report, 1987-1989'. *Syria* 69, 379-89.
- Littauer, M.A., Crouwel, J.H. and Hauptmann, H. 1991: 'Ein spätbronzezeitliches Speichenrad vom Lidar Höyük in der Südost-Türkei'. *AA*, 349-58.
- Lloyd, S. 1972: *Beycesultan III, I. Late Bronze Age Architecture* (Ankara).
- Lumsden, S. 2002: 'Gavurkalesi: Investigations at a Hittite Sacred Place'. In Yener, K.A. and Hoffner, H.A. jr (eds.), *Recent Developments in Hittite Archaeology and History. Papers in Memory of Hans G. Güterbock* (Winona Lake, IN), 111-25.
- Manning, S., Kromer, B., Kuniholm, P.I. and Newton, M.W. 2001: 'Anatolian tree-rings and a new chronology for the east Mediterranean Bronze-Iron Ages'. *Science* 294.21 (December 2001), 2532-35.
- 2003: 'Confirmation of near absolute-Dating of East Mediterranean Bronze-Iron Dendrochronology'. *Antiquity* 77, 295, March 2003 [the article is available only on the internet at: <http://www.antiquity.ac.uk/ProjGall/Manning/manning.html>].
- Matthews, R. (ed.) 1998: *Ancient Anatolia. Fifty Years' Work by the British Institute of Archaeology at Ankara* (London).
- Matthews, R. and Glatz, C. (eds.) 2009: *At Empire's End: Project Paphlagonia Regional Survey in North-Central Turkey* (British Institute of Archaeology at Ankara Monograph 44) (London).
- Matthews, R., Pollard, T. and Ramage, M. 1998: 'Project Paphlagonia: Regional Survey in Northern Anatolia'. In Matthews 1998, 195-206.
- Mellaart, J. 1998: 'Beycesultan'. In Matthews 1998, 61-68.
- Mellaart, J. and Murray, A. 1995: *Beycesultan III.2: Late Bronze Age and Phrygian Pottery and Middle and Late Bronze Age Small Objects* (Ankara).
- Mellink, M.J. 1956: *A Hittite Cemetery at Gordion* (University of Pennsylvania, University Museum Monograph) (Philadelphia).
- Mielke, D.P. 2006a: 'Dendrochronologie und hethitische Archäologie – einige kritische Anmerkungen'. In Mielke *et al.* 2006, 77-94.
- 2006b: 'İnandıktepe und Sarissa. Ein Beitrag zur Datierung althethitischer Fundkomplexe'. In Mielke *et al.* 2006, 251-76.
- Mielke, D.P., Schoop, U.-D. and Seeher, J. (eds.) 2006: *Strukturierung und Datierung in der hethitischen Archäologie. Voraussetzungen – Probleme – Neue Ansätze/ Structuring and Dating in Hittite Archaeology. Requirements – Problems – New Approaches* (BYZAS 4) (Istanbul).
- Müller, U. 2003: 'A Change to Continuity: Bronze Age Traditions in Early Iron Age'. In Fischer, B., Genz, H., Jean, É. and Köroğlu, K. (eds.), *Identifying Changes: The Transition from Bronze to Iron Ages in Anatolia and its Neighbouring Regions* (Proceedings of the International Workshop, Istanbul, November 8-9, 2002) (Istanbul), 137-49.
- Müller-Karpe, A. 2000: 'Kayalıpınar in Ostkappadokien. Ein neuer hethitischer Tontafelfundplatz'. *MDOG* 132, 355-65.
- 2002: 'Kuşaklı-Sarissa. Kultort im Oberen Land'. In *Die Hethiter und ihr Reich* 2002, 176-189.

- 2003a: 'Die Stele von Altınyayla – Ein neues Relief der hethitischen Großreichszeit'. In Özdoğan, M., Hauptmann, H. and Başgelen, N. (eds.), *From Villages to Towns. Studies presented to Ufuk Esin* (Istanbul), 313-19.
- 2003b: 'Remarks on Central Anatolian chronology of the Middle Hittite Period'. In Bietak, M. and Hunger, H. (eds.), *The Synchronisation of Civilisations in the Eastern Mediterranean in the Second Millennium B.C., II* (Proceedings of the SCIEEM 2000 EuroConference, Haindorf, 2nd May-7th May 2001) (Contributions to the Chronology of the Eastern Mediterranean 4) (Vienna), 383-94.
- 2006: 'Untersuchungen in Kayalıpınar 2005'. *MDOG* 138, 211-47.
- Muscarella, O.W. 1974: *Ancient Art: The Norbert Schimmel Collection* (Mainz).
- Neu, E. 2001: 'Hethitologie heute'. In Wilhelm 2001, 1-11.
- Neve, P. 1996: *Ḫattuša. Stadt der Götter und Tempel* (Mainz).
- 1999: *Die Oberstadt von Ḫattuša. Die Bauwerke I. Das zentrale Tempelviertel.* (Boğazköy-Ḫattuša XVI) (Berlin).
- Nissen, H.J. 1999: *Geschichte Alt-Vorderasiens* (Oldenburg Grundriss der Geschichte 25) (Munich).
- Ökse, A.T. 2000: 'Neue hethitische Siedlungen zwischen Maşat Höyük und Kuşaklı'. *IstMitt* 50, 87-111.
- 2001: 'Hethitisches Territorium am oberen Maraşsantia'. Ein Rekonstruktionsversuch'. In Wilhelm 2001, 499-510.
- Omura, S. 2002: 'Preliminary Report on the 16th Excavation at Kaman-Kalehöyük'. *AAS* 11 (= *Kaman-Kalehöyük* 11), 1-44.
- Otten, H. 1958: *Hethitische Totenrituale* (Institut für Orientforschung 37) (Berlin).
- 1988: *Die Bronzetafel aus Boğazköy. Ein Staatsvertrag Tuḫalijas IV* (StBoT Beiheft 1) (Wiesbaden).
- Özenir, S. 2001: 'Eflatunpınar Hitit Kutsal Anıt-Havuz 1998 Yılı Çalışmaları'. In Wilhelm 2001, 532-40.
- Özgüç, T. 1978: *Maşat Höyük kazıları ve çevresindeki araştırmaları./Excavations at Maşat Höyük and investigations in its vicinity* (TTKY V.38) (Ankara).
- 1982: *Maşat Höyük II. Boğazköy'ün kuzeydoğusunda bir Hitit merkezi./A Hittite Centre Northeast of Boğazköy* (TTKY V.38a) (Ankara).
- 1988: *İnandıktepe. Eski Hitit çağında önemli bir kült merkezi./An important Cult Center in the Old Hittite Period* (TTKY V.43) (Ankara).
- 1993: 'Studies on Hittite Relief Vases, Seals, Figurines and Rock-Carvings'. In Mellink, M., Porada, E. and Özgüç, T. (eds.), 1993: *Aspects of Art and Iconography: Anatolia and its Neighbors. Studies in Honor of Nimet Özgüç* (Ankara), 427-99.
- 2002a: 'Alacahöyük. Ein Kultort im Kerngebiet des Reiches'. In *Die Hethiter und ihr Reich* 2002, 172-75.
- 2002b: 'Maşathöyük'. In *Die Hethiter und ihr Reich* 2002, 168-71.
- Özyar, A. (ed.), 2005: *Field Seasons 2001-2003 of the Tarsus-Gözlükule Interdisciplinary Research Projekt* (Istanbul).
- Pelon, O. 1992: 'Quatre campagnes à Porsuk (Cappadoce Méridionale) de 1986 à 1989'. *Syria* 69, 305-47.
- 2003: 'Reflections about fifteen excavation campaigns at Porsuk Höyük (Zeyve)'. *KST* 24.1, 419-21.
- Peschlow-Bindokat, A. 2001: 'Eine hethitische Großprinzeninschrift aus dem Latmos'. *AA*, 363-78.

- Poetto, M. 1993: *L'iscrizione luvio-geroglifica di YALBURT* (Studia Mediterranea 8) (Pavia).
- Postgate, J.N. 1998: 'Between the Plateau and the Sea: Kilise Tepe 1994-97'. In Matthews 1998, 127-41.
- Postgate, J.N. and Thomas, D. (eds.) 2007: *Excavations at Kilise Tepe, 1994-98: From Bronze Age to Byzantine in Western Cilicia* (Cambridge).
- Puchstein, O. 1912: *Boghazköi. Die Bauwerke* (WVDOG 19) (Leipzig).
- Rieken, E. 2006: 'Hethitische Inschriftenfunde der Grabungskampagne 2005 in Kaya-lipinar'. In Müller-Karpe, A., 'Untersuchungen in Kayalipinar 2005'. *MDOG* 138, 227-31.
- Sassmannshausen, L. 2004: 'Babylonian Chronology of the 2nd half of the 2nd Millennium B.C.'. In Hunger and Pruzsinszky 2004, 61-70.
- Schachermeyer, F. 1986: *Mykene und das Hethiterreich* (Vienna).
- Schede, M. 1932: Review of the Oriental Institute Communications 2, 6 and 8 and Oriental Institute Publications 5 and 8. *Gnomon* 8, 534-39.
- Schmidt, K. 2002: *Norguntepe. Kleinfunde II. Artefakte aus Felsgestein, Knochen und Geweih, Ton, Metall und Glas* (Archaeologica Euphratica 2) (Mainz).
- Schoop, U.-D. and Seeher, J. 2006: 'Absolute Chronologie in Boğazköy-Ḫattuša: Das Potential der Radiokarbondaten'. In Mielke *et al.* 2006, 53-75.
- Seeher, J. 1998: 'Neue Befunde zur Endzeit von Ḫattuša: Ausgrabungen auf Büyükkaya in Boğazköy'. In Alp and Stiel 1998, 515-23.
- 1999: *Hattusha Guide. A Day in the Hittite Capital* (Istanbul).
- 2000: 'Getreidelagerung in unterirdischen Großspeichern: zur Methode und ihrer Anwendung im 2. Jahrtausend v. Chr. am Beispiel der Befunde in Ḫattuša'. *SMEA* 42.2, 261-301.
- 2001: 'Die Zerstörung der Stadt Ḫattuša'. In Wilhelm 2001, 623-34.
- 2002a: 'Ḫattusa-Boğazköy – Hauptstadt des Reiches'. In *Die Hethiter und ihr Reich* 2002, 156-63.
- 2002b: 'Die Ausgrabungen in Boğazköy-Ḫattuša 2001'. *AA*, 59-78.
- 2003: 'The Cuneiform Tablet Archives and Libraries of Hattusha'. In *Ancient Libraries in Anatolia: Libraries of Hattusha, Pergamon, Ephesus, Nysa* (The 24th Annual Conference Libraries and Education in the Networked Information Environment, June 2-5 2003, Ankara, Turkey) (Ankara), 7-17.
- 2006: 'Chronology in Ḫattuša: New Approaches to an old Problem'. In Mielke *et al.* 2006, 197-213.
- 2007: 'Warum man aufhören muß, Antiken zu sammeln'. *AntWelt* 38.2, 27-32.
- Sevin, V. 1995: *Imikuşağı I. (6.-I. yapı katları)* (TTKY VI.47) (Ankara).
- Sipahi, T. 2000: 'Eine althethitische Reliefvase vom Hüseyindede Tepesi'. *IstMitt* 50, 63-85.
- 2001: 'New Evidence from Anatolia regarding Bull-Leaping Scenes in the Art of the Aegean and the Near East'. *Anatolica* 27, 107-25.
- Souček, V. and Siegelová, J. 1996: *Systematische Bibliographie der Hethitologie 1915-1995* (Prague).
- Starke, F. 1997: 'Troia im Kontext des historisch-politischen Umfeldes Kleinasiens im 2. Jahrtausend'. *Studia Troica* 7, 447-87.
- Süel, A. 1998: 'Ortaköy-Şapinuwa: Bir Hitit Merkezi'. *TÜBA-AR* I, 37-61.
- 2001: 'Ortaköy tabletleri ışığında batı anadolu ile ilgili bazı konular üzerine'. In Wilhelm 2001, 670-78.

- 2002: 'Ortaköy-Şapinuwa'. In Yener, K.A. and Hoffner, H.A. jr (eds.), *Recent Developments in Hittite Archaeology and History. Papers in Memory of Hans G. Güterbock* (Winona Lake, IN), 157-65.
- (ed.) 2005: *V. Uluslararası Hititoloji Kongresi Bildirileri, Çorum, 02-08 Eylül 2002/ Acts of the Vth International Congress of Hittitology, Çorum, 2-8 September 2002* (Ankara).
- Süel, M. 2001: 'Ortaköy-Şapinuwa 'B' binası'. In Wilhelm 2001, 679-84.
- Sürenhagen, D. 1996: 'Politischer Niedergang und kulturelles Nachleben des hethitischen Großreiches im Lichte neuerer Forschung'. In Magen, U. and Rashad, M. (eds.), *Vom Halys zum Euphrat. Thomas Beran zu Ehren* (Alttertumskunde des Vorderen Orients 7) (Münster), 283-93.
- Symington, D. 2001: 'Hittites at Kilise Tepe'. In Jean *et al.* 2001, 167-84.
- Umurtak, G. 1996: *Korucutepe II: 1973-1975 dönemi kazılarında bulunmuş olan Hitit çağı çanak çömleği* (TTKY V.42a) (Ankara).
- Ünal, A. 1993: 'Grundsätzliches zur Korrelation archäologischer und philologischer Daten im hethiterzeitlichen Anatolien'. *IstMitt* 43, 117-22.
- 1998: *Hittite and Hurrian Cuneiform Tablets from Ortaköy (Çorum), Central Turkey* (Istanbul).
- van den Hout, T.P.J. 2002: 'Tombs and Memorials: The (Divine) Stone-House and Hegur Reconsidered'. In Yener, K.A. and Hoffner, H.A. jr (eds.) 2002: *Recent Developments in Hittite Archaeology and History. Papers in Memory of Hans G. Güterbock* (Winona Lake, IN), 73-91.
- van Loon, M.N. (ed.) 1978, 1980: *Korucutepe: Final Report on the Excavations of the Universities of Chicago, California (Los Angeles) and Amsterdam in the Keban Reservoir, Eastern Anatolia, 1968-1970*, vols. 2-3 (Amsterdam/Oxford/New York).
- Voigt, M.M. 1994: 'Excavations at Gordion 1988-89: The Yassihöyük Stratigraphic Sequence'. In Çilingiroğlu, A. and French, D.H. (eds.), *Anatolian Iron Ages 3* (The Proceedings of the Third Anatolian Iron Ages Colloquium held at Van, 6-12 August 1990) (British School of Archaeology at Ankara Monograph 16) (London), 265-93.
- von den Driesch, A. and Pöllath, N. 2004: *Vor- und frühgeschichtliche Nutztierrhaltung und Jagd auf Büyükkaya in Boğayköy-Hattuša, Zentralanatolien* (Boğazköy-Berichte 7) (Mainz).
- von der Osten, H.H. 1937: *The Alishar Hüyük. Seasons of 1930-32, II* (Oriental Institute Publications 29/Researches in Anatolia 7) (Chicago).
- Watson, W.G.E. and Wyatt, N. (eds.) 1999: *Handbook of Ugaritic Studies (HdO I 39)* (Leiden/Boston/Cologne).
- Wilhelm, G. 1997: *Keilschrifttexte aus Gebäude A* (Kuşaklı-Sarissa 1.1) (Rahden, Westphalia).
- (ed.) 2001: *Akten des IV. Internationalen Kongresses für Hethitologie. Würzburg, 4.-8. Oktober 1999* (StBoT 45) (Wiesbaden).
- 2004: 'Generation Count in Hittite Chronology'. In Hunger and Pruzsinszky 2004, 71-79.
- Yıldırım, T. 2000: 'Yörüklü/Hüseyindede: Eine neue hethitische Siedlung im Südwesten von Çorum'. *IstMitt* 50, 43-62.
- Yon, M. 2006: *The City of Ugarit at Tell Ras Shamra* (Winona Lake, IN).

CHAPTER 2

HISTORY OF THE HITTITES

HORST KLENGEL

Abstract

The history of the Hittite kingdom began when Ḫattušili I made Ḫattuša his capital in the 17th century BC. The first kings of the Old Hittite period campaigned intensively in Syria and even managed to sack Babylon. After the death of Muršili in the early 16th century Hittite power waned, and during the later part of the Old Hittite period as well as in the Middle Hittite period, Hittite influence was confined mainly to Central Anatolia. Only with the accession of Šuppiluliuma I, and thus the beginning of the Empire period in the 14th century, did Ḫatti's power expand again into Syria, which led to conflict with Egypt that culminated in the Battle of Qadeš between Ramesses II and Muwatalli II. After the famous peace treaty between Egypt and Ḫatti was concluded, relations between both countries remained friendly until the end of the Hittite empire in the early years of the 12th century BC.

EARLY HISTORY

The early history of the Indo-European speaking population we now call 'Hittites' due to a later biblical tradition is still far from clear. While the archaeological evidence rather suggests a local development of Hittite material culture, linguistic affiliation could point to an immigration into Anatolia from beyond the Black Sea.¹ As there is no evidence of a seafaring venture, a land route either via the Caucasian coast or the Balkans should be taken into consideration. In any case, the Old Assyrian texts discovered in Level II at Kültepe (Kaneš/Neša), written by merchants coming from upper Mesopotamia, confirm the presence of Indo-European speaking groups in Central Anatolia for the period around 1900 BC. Linguistically, the immigrants can be subdivided into 'Hittites' (people of Ḫatti), Palaians and Luwians. In Anatolia they encountered an indigenous population; obviously the rivalry between the various local principalities with their fortified centres provided favourable conditions for

¹ The most recent discussion of the problem of the origin of the Indo-Europeans from a linguistic point of view is Tischler 2002.

these immigrants to establish themselves. Later texts from Kültepe (Level Ib) can be pinpointed chronologically because they mention Šamši-Addu I (early 18th century BC), who ruled parts of upper Mesopotamia at that time; thus he was also in control of the routes leading from Aššur to Kaneš. The texts testify to several political entities struggling for domination in Central Anatolia. The inscription of a certain Anitta, handed down in a later Hittite copy, reports a series of military campaigns; among the principal conquered places Ḫattuša is mentioned as a fortified city.² According to this report, Anitta is said to have cursed this site and to have sown weeds in order to demonstrate that this place should never be resettled.³ This certainly was a later propagandistic interpretation of Ḫattušili I in order to accentuate his merit for having made Ḫattuša his capital. In any case, the line of Hittite kings⁴ residing at Ḫattuša starts with Ḫattušili, who – it seems – formerly had his residence at Kuššar and changed his name afterwards to Ḫattušili, ‘the one of Ḫattuša’. He also called himself Labarna, i.e. he used the name of his predecessor, who was married to Tawananna, the daughter of Ḫattušili’s grandmother. Whereas *labarna* became the epithet of the Hittite king, *tawananna* was used to designate the queen. This could indicate a matrilineal system of reference, which played a certain role up to the end of the Hittite state, but obviously had its origin in pre-state conditions when clan structures were still dominant.

THE TIME OF THE OLD HITTITE KINGDOM

Thus Ḫattušili I (after 1650 BC)⁵ stands at the beginning of a long line of rulers, mentioned in the written tradition as residing in Ḫattuša.⁶ He was the first Hittite king to expand his power beyond the Taurus Mountains by subduing parts of northern Syria and Mesopotamia, where he became acquainted with a Syrian variant of the Old Babylonian type of cuneiform writing and the Babylonian (Akkadian) language – and at the same time with the literary and cultic traditions of Mesopotamia. Thenceforth, both cuneiform writing and parts of the cultural heritage of upper Mesopotamia were adapted and exercised

² Neu 1974.

³ See the contribution by Dörfler *et al.* in this volume for an interpretation of this act from an archaeobotanical point of view.

⁴ For a list of the Hittite kings, see the contribution by Genz and Mielke (fig. 2) in this volume.

⁵ So far there is no Hittite king whose reign can be dated exactly. On the problem of an absolute chronology of the Hittite kings, see Beckman 2000; Genz and Mielke in this volume, pp. 14-19. For a list of Hittite kings with their approximate reigns, see Nissen 1999, 246-47.

⁶ See here and in general Bryce 1998; Klengel 1999a; de Martino 2003.

a strong influence not only on the development of Hittite culture but also on the administration of the Hittite state, which was supported by a south Anatolian system of writing in use in areas where Luwian was dominant. This 'hieroglyphic' script was used mainly for carving into stone or, probably, for writing on wooden tablets, which unfortunately do not survive, whereas the cuneiform texts on clay tablets were preserved due to the destruction of the archives by fire. Thus, in the Hittite written tradition cultic, literary and diplomatic texts prevail, but also an official royal view of the past and the present of the state, whereas texts referring to the administrative and economic practices are relatively rare. As far as history is concerned, military reports, 'autobiographical' accounts, diplomatic letters and treaties predominate.⁷ As most of these texts cannot be inserted into an absolute chronology with precision, the reigns of the kings as well as important historical events can only be fixed when they can be correlated with securely dated events beyond Hittite Anatolia. Therefore, most of the absolute dates concerning Hittite history should be taken as proposals, and relative chronology remains dominant.

The political events at the time when Hattušili I ruled in Hattuša are dominated by military campaigns in Central Anatolia and by subsequent conquests beyond the Taurus, i.e. in northern Syria and upper Mesopotamia (Figs. 1-2). Hattušili himself points to the fact that his crossing of the Euphrates was an achievement comparable with that of Sargon of Akkad (24th century BC) who crossed this river in the opposite direction, and a literary tradition points to the difficulties of the march through the mountains and narrow passes of the Taurus.⁸ Hittite incursions into the fertile plains beyond the Taurus, with their important trade routes and flourishing cities, obviously brought rich booty to Hattuša, and the submission of this region contributed considerably to a heightened prestige which Hattušili could orchestrate in order to strengthen his position in Central Anatolia. In this context it is worth mentioning that though the powerful and rich city of Halab/Aleppo was not conquered by the Hittite army, a statue of the mighty Weather God of Halab fell into Hittite hands in the northern Syrian city of Haššum. The monument was transported to Hattuša and adorned and venerated there, thus supporting Hittite claims to dominate northern Syria. It seems possible that in connection with the military campaigns of Hattušili I the city of Ebla was conquered and destroyed, as indicated by several fragments of Old Hittite cuneiform tablets as well as in a Hittite-Hurrian bilingual discovered in the archives of Hattuša more recently.⁹ A letter of

⁷ For the written sources, see the contribution by van den Hout in this volume.

⁸ Otten 1963. See also Soysal 1987.

⁹ Neu 1996.

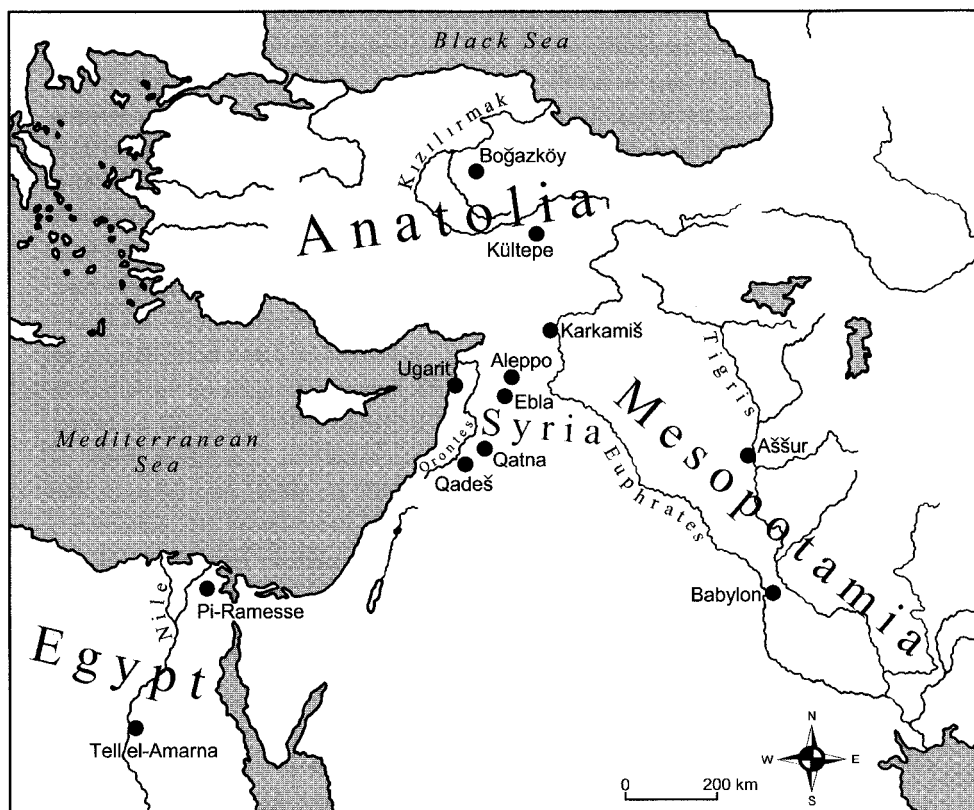


Fig. 1. Map of the ancient Near East with the most important places and modern geographical names mentioned in the text (D.P. Mielke).

Ḫattušili, addressed to the ruler of Tikunani points to military activities in upper Mesopotamia and mentions the city of Ḫaḫḫum. The name of the ruler of Tikunani, Tunip-Teššub/Tunija, is Hurrian and indicates a presence of Hurrian population groups in this area.¹⁰ Before Ḫattušili died, he adopted the young Muršili as successor. This was done in opposition to the royal family, which is said to have conspired against him. This as well as other experiences contributed to the demand that the royal kin should always be ‘united like a pack of wolves’, a phrase reflecting the importance of the still existing clan structures in early Hittite society.

¹⁰ Salvini 1995; 1996, 107-14.

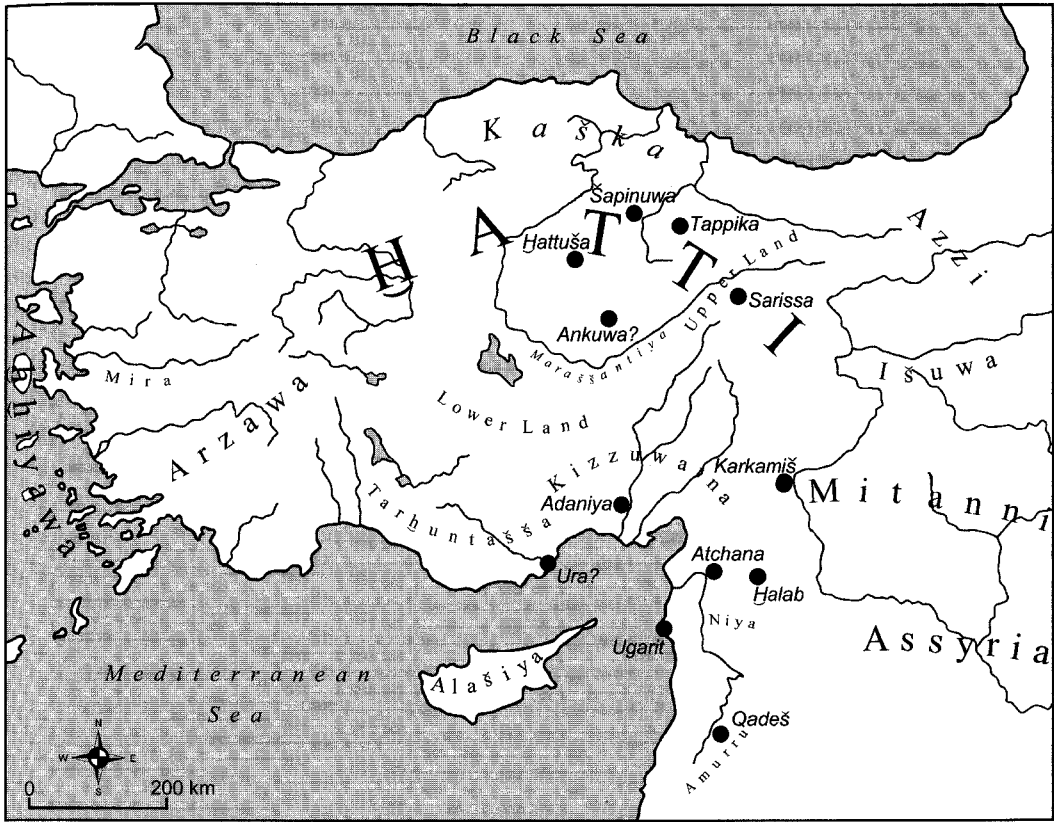


Fig. 2. Map of Anatolia and North Syria with the most important places and ancient geographical names (D.P. Mielke).

Muršili I (*ca.* 1600 BC) continued the policy of Hattušili and campaigned in Syria again; he battled with local Hurrian kings in the region of the upper Euphrates and conquered not only the rich city of Halab/Aleppo, but even marched down the valley of the Euphrates to the already famous city of Babylon (Fig. 1). Šamsuditana of Babylon, the last king of the dynasty of Hammurapi, was defeated, the city was conquered, and the famous statue of the god Marduk was taken away. This did not mean that Babylon became part of the Hittite kingdom, but the prestige of Muršili would have grown considerably. Later texts point to the rich booty taken during these campaigns beyond the Taurus, and also to the prisoners who were needed as a labour-force in Anatolia. Although – or because – he was successful, Muršili was murdered by members

of the Hittite aristocracy. Internal conflicts weakened the Hittite monarchy during the following period and the possessions beyond the Taurus were lost. But contact with this area certainly favoured the introduction of cuneiform writing on clay tablets for Hittite administration and historical tradition.

The period after the reign of the successful kings Hattušili I and Muršili I was overshadowed by a series of murders, which contributed to the decay of royal prestige and power. The events are recorded in an edict of King Telipinu (*ca.* 1525 BC) fixing the male line of succession to the throne, thus contributing to a certain stabilisation of the Hittite state in Anatolia. Furthermore, this edict also contains an improvement of the system of taxes.¹¹ Royal storehouses, the doors of which were protected by seals, were established at various places of Hittite Anatolia. The king assembled a council (Hittite *tulija*) – a relic of earlier times and certainly not an instrument of real ‘democracy’ – to announce a new order of succession to the royal throne in favour of a ‘son of first rank’ of the deceased ruler. In case no such heir existed, another royal prince or a son of the daughter of the deceased ruler could become king. The efficiency of the individual households, the basic social and economic institution in Hittite society, was secured by a suitable law of succession. A military campaign of Telipinu into the region of the Middle Taurus and to the upper Euphrates was not only a starting point for a new policy of expansion, but also a response to changes which had taken place in northern Mesopotamia, especially the development of the state of Mitanni during a power vacuum in the area.

THE MIDDLE HITTITE PERIOD

Hittite history after Telipinu is often designated as the ‘Middle Empire’, which lasted for about 150 years until the middle of the 14th century BC. During this period, northern Mesopotamia and parts of northern Syria were dominated by the kingdom of Mitanni (Fig. 2), whereas the Pharaohs of the 18th Dynasty established Egyptian provinces in southern Syria. The Hittite kings tried to secure their border area in the Taurus by making contracts with the kings of the land of Kizzuwatna, which in the meantime had developed in the area between those of Hittite and Mitannian domination. The contact between the Hittites and the Hurrian population in south-eastern Asia Minor certainly intensified the influence of Hurrian culture, especially in the fields of religion and literature; this was also the case in Central Anatolia. Members of the Hittite

¹¹ Hoffmann 1984. The historical interpretation of this document is still being discussed.

royal family now used Hurrian names beside their Hittite ones, thus representing both components of the population, and Hurrian gods and cults grew in importance.

In order to strengthen their own position Hittite kings provided people with landed property; title deeds are typical especially for this period, in which the former kin relationships lost importance, supplanted increasingly by social and economic determinants. At the time of Tuḫaliya I (or II?) and Arnuwanda I (before and after 1400 BC) Hittite military expeditions into western Anatolia are reported, as they are against the Kaškan tribes living in north and north-eastern Anatolia as well. Arnuwanda I concluded a treaty with the Kaškan chiefs and with the ruler of the land of Išmerikka on the upper Euphrates. In the south-east, beyond the Taurus Mountains, the kingdom of Kizzuwatna was bound to the Hittites by a treaty of subordination, but remained in close contact with Mitani as well.¹² In south-western Anatolia the king of Arzawa (Fig. 2) held a relatively independent position, and even felt strong enough to prepare a dynastic connection and alliance with Egypt, as evidenced by a letter discovered in Tell el-Amarna in Egypt (EA 31). In the Aegean, local rulers pursued their own policy, and Hittite tradition mentions for the first time the country of Ahhiya (later Ahhiyawa), thus pointing to the presence of Mycenaeans.¹³ On the eastern border of the Hittite kingdom, Mitanni was still a powerful neighbour in upper Mesopotamia, being in control of northern Syria as well. This situation, shortly before Šuppiluliuma became king in Ḫattuša, is partly reflected by royal correspondence discovered in Tell el-Amarna in Egypt, which is an important witness to a period when the Hittite kingdom again grew in power.¹⁴ But then, according to a later tradition, the Kaškan groups of northern Anatolia¹⁵ started to invade the Hittite heartland, and it is possible that they even conquered and plundered Ḫattuša. Troops of Arzawa marched against Ḫatti from western Anatolia, and the 'Upper Land' was raided by troops of the land of Azzi in the north-east. An army of the land of Išuwa (upper Euphrates) was fighting in the eastern parts of the Hittite kingdom, and the border area of Kizzuwatna suffered from attacks by people from Armatana (Fig. 2). Thus, Hittite territory was reduced to Central Anatolia once again.

¹² For the history of this kingdom, see Goetze 1940; Kümmel 1980.

¹³ Heinhold-Kramer 1977; 2003.

¹⁴ Knudtzon 1915; Moran 1992.

¹⁵ von Schuler 1965; 1980.

THE HITTITE EMPIRE

This was the situation when Šuppiluliuma I, son of Tuḫaliya III, ascended the throne in Ḫattuša in about 1343 BC. According to his own report, this new king needed '20 years' – perhaps just indicating a 'long time' – to reconquer the former Hittite territories. In doing so, he acted in accordance with the interests of Assyria and its north-westerly expansion. After a campaign against Tušratta of Mitanni in upper Mesopotamia¹⁶ he received the submission of local princes in northern Syria, which had been under the overlordship of Mitanni before – among them the ruler of Ugarit, the important harbour-city. The country of Niya on the Orontes was plundered, Qatna in central Syria was submitted and the ruler of Qadeš, formally under Egyptian domination, was defeated in a battle and thereafter exiled to Ḫatti (Fig. 2).¹⁷ In a later text, written under the auspices of a Hittite-Egyptian approach, Šuppiluliuma emphasises that this action should not be understood as a hostile act against Egypt. In central Syria, in the land of Amurru, the Hittite and the Egyptian kingdoms had now a common border – a fact which became important for both Hittite and Egyptian policy during the following decades. But Mitanni was still powerful in the area of the upper Ḫabur River, having a bridgehead even west of the Euphrates at Karkamiš, which was obviously ruled by a Mitannian governor, not by a member of a local dynasty.

Usually, the Hittite king wintered in Anatolia, where he was occupied mainly with cultic duties and in repulsing the Kaškan groups in the northern mountains. Then King Tušratta of Mitanni was murdered, obviously in connection with a dynastic dispute. It is recorded, the son of Tušratta, Šattiwaza, appeared in Anatolia and submitted to the Hittite king; his principality became a Hittite protectorate¹⁸. Thus the Hittite king could now start to interfere in Mitannian affairs. First, he focused on the conquest of Karkamiš, while another part of the army marched southward to the area between the Lebanon and the Antilebanon. This was Egyptian territory, but the expedition was considered by the Hittites as revenge for Egyptian attacks on Qadeš. It seems that this campaign could also be seen against the background of rivalries which had developed in Egypt after the death of a Pharaoh, the identity of whom is still being discussed. During the time when Šuppiluliuma and his troops stood before the walls of

¹⁶ For Hittite – Mitannian relations, see Wilhelm 1989, 20-38; Klengel 1978; de Martino 2000.

¹⁷ For the military activities of the Hittites in Syria, see Klengel 1992, 106-74; 1999a, 155-67.

¹⁸ For his treaty with Šuppiluliuma, see Weidner 1923, 2-57; also Beckman 1999, 42-48.

Karkamiš, he received a letter from the Egyptian queen, the widow of the deceased Pharaoh, asking him for one of his sons who should become her husband and also king of Egypt (the so-called *daḥamunzu* episode).¹⁹ The surprised Šuppiluliuma asked for a confirmation of this message; it came in a rather urgent letter which he received after he had already conquered Karkamiš. He sent one of his sons to Egypt, who is called ‘Zannanza’ in the Hittite tradition; but this prince was murdered – at least this is what Šuppiluliuma supposes in a letter he addressed to Aja, a general who had meanwhile ascended the Pharaonic throne.²⁰ This was a declaration of war – but it was not followed by immediate military actions, perhaps because of an epidemic²¹ which had broken out during the reign of Šuppiluliuma and which persisted until the time of his successor Muṣṣili II.

Like his predecessors on the throne of Ḫattuša, Muṣṣili II (*ca.* 1315 BC) had first to stabilise Hittite rule in Anatolia before venturing military campaigns into Syria, where local unrest had the backing of Assyria, which had expanded its military control into the region of the Baliḫ River, thus becoming immediate neighbours of the Hittite kingdom of Karkamiš. Furthermore, the army of Pharaoh Haremhab was again active in central Syria, i.e. in the region of Qadeš. When Piyaššili of Karkamiš, brother of Muṣṣili, died during the ninth year of the reign of Muṣṣili II, a personal appearance of Muṣṣili II in Syria became necessary – the more so as King Adad-Nirari I of Assyria (1305-1274 BC) attacked territories east of the Euphrates which stood under Hittite control. A son of Piyaššili, Šaḫurunuwa, was installed as king of Karkamiš, and Hittite troops were garrisoned in Emar on the western bank of the Euphrates. Also other Syrian affairs were settled in order to strengthen Hittite rule again, and a treaty was concluded with the new ruler of the land of Amurru, which confirmed his tributary status towards the Great King of Ḫatti: he was now strictly forbidden to pay tribute also to the Pharaoh as he had obviously done before. Thus, central Syria became an area of special Hittite interest again.

When Muṣṣili II died, his son Muwatalli (*ca.* 1275 BC) became Great King of the Hittite empire. He transferred his royal residence to Tarḫuntašša, a town (and country) in southern Anatolia, not far from the Cilician coast of the Mediterranean (Fig. 2). In contrast to Ḫattuša, it was far from the area always threatened by the Kaškan *razzias*, and it was also an important cultic centre, situated on the route from Anatolia to the shores of the Mediterranean, thus

¹⁹ Güterbock 1956, 94-99; Edel 1994, 14-15; and the reference to Hittite–Egyptian relations in Klengel 2002, 43-48.

²⁰ van den Hout 1994.

²¹ Klengel 1999b.

also closer to Syria which again became the focal point of Hittite interest. In western Anatolia Muwatalli found support by King Alakšandu, who concluded a treaty of subordination,²² which mentions the kings of Egypt, Babylonia, Ḫanigalbat (upper Mesopotamia) and Assyria as possible enemies, namely all important rulers of that time.²³ War with Egypt started – ‘because of Amurru’ as it was stated later – during the early years of the reign of Pharaoh Ramesses II (i.e. 1275, assuming an absolute date of the long reign of this Pharaoh from 1279 until 1213 BC) and culminated in the Battle of Qadeš. In his own reports Ramesses claimed the victory for himself, but strategically the real winners certainly were the Hittites and their allies.²⁴ In any case, Qadeš and the land of Amurru remained under Hittite control, and the ruler of Amurru, Bentešina, was exiled to Anatolia. But it took a further 16 years, before a Hittite-Egyptian peace treaty was signed. Nevertheless, Ḫatti was able to secure military rule beyond the Taurus in Syria. This was the more important, as Assyrian power now expanded in northern Mesopotamia and came to menace Hittite domination in the Euphrates region.

When Muwatalli died, he was followed, according to a traditional law of succession, by one of his sons from a secondary wife, Urḫi-Teššub, whose throne name became Muršili III. His uncle Ḫattušili, who was now king of Ḫakpiš/Ḫakmiš in northern Anatolia and certainly the most powerful member of the royal family, always used to mention his ruling nephew by his Hurrian princely name, Urḫi-Teššub, not by his royal name, Muršili. Nevertheless, documents of Muršili III himself are rare, but there are impressions of his royal seal which indicate that he changed his residence from Tarḫuntašša back to Ḫattuša. It seems that both Egypt and Assyria accepted this successor of Muwatalli, and there was also some agreement between Muršili III and his uncle Ḫattušili. In a later document (‘apology’),²⁵ which describes his path to the throne, but also tries to prepare the succession of his son Tutḫaliya, Ḫattušili describes his career as both military commander and governor of a district. Then he took Muršili III as prisoner, exiled him to Syria and became Great King himself.

²² Friedrich 1930, 42-102; Beckman 1999, 82-86 (Manapa-Tarḫunta treaty), 87-93 (Alakšandu treaty).

²³ See the compilation of Hittite treaties by Beckman 1999.

²⁴ There are several Egyptian descriptions of the battle of Qadeš. For the different versions and their interpretation, see Kitchen 1996; 1999. See also von der Way 1984.

²⁵ Otten 1981.

RELATIONS WITH EGYPT

This situation is also reflected in the correspondence between Ḫattušili III, now Great King of Ḫatti, and his 'brother' Ramesses II.²⁶ These letters, copies of which were discovered by the German excavations in various archives of Ḫattuša (Boğazköy) and which were obviously kept also in the archives of Ramesses II in his residential city Pi-Ramessé in the eastern Nile delta, have as their main subject two events – the peace concluded with Egypt in the twenty-first regnal year of Ramesses (1259 BC) and, afterwards, the dynastic marriage of this Pharaoh with a daughter of Ḫattušili. For Ḫattušili, who was not the legal heir to the throne but certainly the most influential dignitary, it was of special importance to have good relations with Egypt, the highly respected and most splendid power of that time. As there was still no official peace made after the Battle of Qadeš and the Assyrians were now advancing along the Euphrates frontier, an agreement with the Pharaoh could both end the hostilities on the Syrian border and set free Hittite forces needed in upper Mesopotamia. The correspondence between the courts in Ḫattuša and Pi-Ramessé stresses the 'brotherhood' now established between Ḫatti and Egypt. The text of this treaty between equal partners is handed down in both an Egyptian and a Babylonian (Akkadian) version.²⁷ It emphasises not only the newly established 'peace and brotherhood' between the two partners, but contains also a mutual promise of non-aggression, an assurance of help against both foreign and internal enemies (which, it is clear, is mentioned explicitly because of the political situation of Ḫattušili), a guarantee given by the Pharaoh concerning his support for the succession of Tuthaliya, Ḫattušili's son, and provision for the extradition of fugitives. At the end, as usual, the divine witnesses of the treaty are mentioned and a clause that should protect the treaty from being broken by one of the two partners is added.

This 'treaty of peace and brotherhood' was accompanied by a correspondence between the two royal courts and was continued with a new subject later on: the dynastic marriage between Ramesses II and a daughter of Ḫattušili III and his wife Puduḫepa; both the Hittite and Egyptian queens participated intensively in this correspondence.²⁸ Thus, Ḫatti and Egypt should become 'one country'. The dynastic marriage took place in the thirty-fourth regnal year of Ramesses and is described and depicted on a 'marriage stele' which is still to be seen at Abu Simbel (Fig. 3), showing Ḫattušili III, at the margin of the

²⁶ Edel 1994.

²⁷ Edel 1997.

²⁸ Edel 1994.

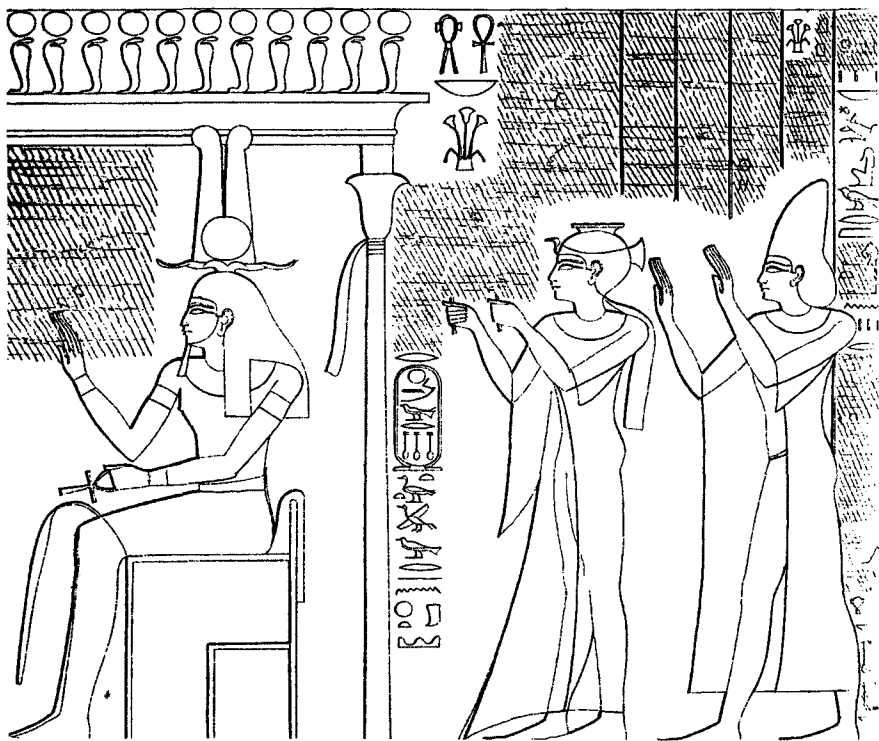


Fig. 3. So-called 'marriage stele' from Abu Simbel. The Great King Ḫattušili III (right) brings his daughter (middle) to the Pharaoh Ramesses II (left) (after R. Lepsius, *Denkmäler aus Ägypten und Äthiopien* Abteilung III, Band VII [Berlin 1849-59], Bl. 196).

scene, introducing his daughter to Ramesses,²⁹ though there is no proof so far that Ḫattušili himself travelled to Egypt on this or any other occasion – not only because of internal reasons in Anatolia but also in order to avoid any interpretation of such a visit by Egyptian propaganda as an act of submission.

This peace and 'brotherhood' with the Pharaoh and the later dynastic marriage certainly strengthened the position of the usurper Ḫattušili among the leading rulers of the Near East. He proudly remarks that all the kings of the Near East started to send him ambassadors and gifts. In western Anatolia, Ḫattušili was able to strengthen his position against the kingdom of Aḫḫiyawa, and in southern Anatolia, in the land of Tarḫuntašša, he installed his nephew Kurunta as viceroy.³⁰ Hittite rule in northern Syria was still in the hands of the

²⁹ For the text of the stele, see Kitchen 1996, 86-96.

³⁰ For the Kurunta treaty, see Otten 1988.

king of Karkamiš, whose activities are clearly reflected by the cuneiform texts of Ugarit. As far as Mesopotamia is concerned, Ḫattušili had a correspondence with both Assyria and Babylonia; a 'daughter of Babylon' was married to Ḫattušili – obviously an act to secure Hittite interests in upper Mesopotamia.

THE LAST KINGS

Before Ḫattušili III died, he settled the succession to the throne. Instead of another royal prince, Tuthaliya (IV) (*ca.* 1225 BC) became his favourite and forged a career similar to that of Ḫattušili himself. This could have contributed to the special care for the sanctuaries of the Hittite country, but also to the activities of the new Great King concerning the two Hittite sub-kingdoms in southern Anatolia (Tarḫuntašša) and in Syria (Karkamiš). He himself intervened into quarrels between Ugarit and Amurru in order to strengthen Hittite control beyond the Taurus, and he had also correspondence with Assyria, which was expanding under Šalmaneser I (1273-1244 BC) and Tukulti-Ninurta I (1243-1207 BC).³¹ But there is evidence too of complications within the Hittite kingdom itself, especially as far as relations with Tarḫuntašša were concerned.³² It is unclear whether this situation had anything to do with the first appearance of groups of the so-called Sea Peoples or not. But political problems are known also from the short reign of Arnuwanda III, son of Tuthaliya IV, who died without a son of his own. He was followed by another of Tuthaliya IV's sons, who bore the same name as the founder of the empire, Šuppiluliuma (II) (*ca.* 1200 BC) – the last Great King of the Hittite countries. It seems that his troops were fighting successfully in central and south-western Anatolia, and it is probable that he concluded a treaty with the land of Alašiya, probably Cyprus, which had been controlled by the Hittites in the past.

In one of the letters addressed to the king of Ugarit by a king of Alašiya, the sender warns the addressee that foreign ships had appeared and that their crews, the Šikila, were plundering Syrian cities.³³ Shortly afterwards the Hittite state collapsed, possibly through a political and economic crisis which brought to an end the Hittite state in Anatolia and changed the political system in the Levant. As far as Ḫattuša is concerned, there is no evidence of conquest and destruction by foreign enemies. It is therefore reasonable to assume that other events contributed to the breakdown of the Hittite state, possibly connected to the political and economic structure in Anatolia itself. The Hittite system of rule depended largely on the production of royal and individual households; part of

³¹ Harrak 1987, 132-287.

³² Singer 1996.

³³ See Lehmann 1979; Edel 1984; Ward and Joukowski 1992; Singer 2000, 27.

their yield was transferred to royal storehouses in the districts to be consumed by the local administration or sent to Ḫattuša. Without these deliveries, Ḫattuša, it seems, was unable to feed the court and the central administration, the inhabitants of the city and – last but not least – the gods with their numerous cult places in the palace of the citadel, the ‘Lower City’ and also the ‘Upper City’. Late 13th-century Ḫatti suffered both from famines, although ships with grain were sent from Egypt, as indicated already by texts from the later time of Ḫattušili III and Ramesses II, and from the attacks of enemies at its borders. The internal crisis of the Anatolian state of the Hittites was, therefore, connected with a general crisis in the countries of western Asia during the final Late Bronze Age, sometimes described, in terms of our knowledge of the situation, as a ‘dark age’. Even more: the Hittite kingdom of the 2nd millennium BC in Central Anatolia completely disappeared from the historical memory of man until it was rediscovered by archaeological and philological research at the beginning of the 20th century.

BIBLIOGRAPHY

- Beckman, G. 1999: *Hittite Diplomatic Texts*, 2nd ed. (Atlanta).
 — 2000: ‘Hittite Chronology’. *Akkadica* 119-120 (= *Just in Time* [Proceedings of the International Colloquium on Ancient Near Eastern Chronology, 2nd Millennium BC, Ghent 7-9 July 2000]), 19-32.
 Bryce, T.R. 1998: *The Kingdom of the Hittites* (Oxford).
 de Martino, S. 2000: ‘Il regno hurrita di Mitanni: profilo storico-politico’. In Pugliese Carratelli, G. (ed.), *La civiltà dei Hurriti (PP 55)* (Naples), 68-102.
 — 2003: *Gli Ititi* (Rome).
 Edel, E. 1984: ‘Die Sikeloi in den ägyptischen Seevölkertexten und in den Keilschrifturkunden’. *Biblische Notizen* 23, 7-8.
 — 1994: *Die ägyptisch-hethitische Korrespondenz aus Boghazköi und babylonischer und hethitischer Sprache* (Opladen).
 — 1997: *Der Vertrag zwischen Ramses II. von Ägypten und Ḫattušili III. von Ḫatti (WVDOG 95)* (Berlin).
 Friedrich, J. 1930: *Staatsverträge des Hatti-Reiches in hethitischer Sprache* (Leipzig).
 Goetze, A. 1940: *Kizzuwatna and the Problem of Hittite Geography* (New Haven).
 Güterbock, H.G. 1956: ‘The Deeds of Suppiluliuma as told by his son, Muṣili II’. *JCS* 10, 41-68, 75-99, 107-30.
 Harrak, A. 1987: *Assyria and Hanigalbat: A Historical Reconstruction of Bilateral Relations from the Middle of the Fourteenth to the End of the Twelfth Centuries B.C.* (Hildesheim/New York).
 Heinhold-Kramer, S. 1977: *Arzawa. Untersuchungen zu seiner Geschichte nach den hethitischen Quellen (THeth 8)* (Heidelberg).
 — 2003: ‘Aḫhiyawa – das Land der homerischen Achäer im Krieg mit Wiluša?’. In Ulf, C. (ed.), *Der neue Streit um Troja. Eine Bilanz* (Munich), 193-214.

- Hoffmann, I. 1984: *Der Erlaß Telepinus (THeth 11)* (Heidelberg).
- Kitchen, K.A. 1996: *Ramesside Inscriptions, Historical and Biographical. Translated and Annotated. Translations II: Ramses II, Royal Inscriptions* (Oxford/Cambridge, MA).
- 1999: *Ramesside Inscriptions, Historical and Biographical. Translated and Annotated. Notes and Comments II: Ramses II, Royal Inscriptions* (Oxford/Cambridge, MA).
- Klengel, H. 1978: 'Mitanni: Probleme seiner Expansion und politischen Struktur'. *RHA* 36, 91-115.
- 1992: *Syria 3000 to 300 B.C.* (Berlin).
- 1999a: *Geschichte des Hethitischen Reiches (HdO Abteilung 1.34)* (Leiden/Boston/Cologne).
- 1999b: 'Epidemien im spätbronzezeitlichen Syrien – Palästina'. In Avishur, Y. and Deutsch, R. (eds.), *Michael. Historical, Epigraphical and Biblical Studies in Honor of Prof. Michael Heltzer* (Tel Aviv/Jaffa), 187-93.
- 2002: *Hattuschili und Ramses. Hethiter und Ägypter – ihr langer Weg zum Frieden* (Mainz).
- Knudtzon, J.A. 1915: *Die el-Amarna-Tafeln* (Leipzig).
- Kümmel, H.M. 1980: s.v. 'Kizzuwatna'. *RLAss* V, 627-31.
- Lehmann, G.F. 1979: 'Die Sikalaju – ein neues Zeugnis zu den "Seevölker"-Heerfahrten im späten 13. Jh. v. Chr. (RS 34.129)'. *UF* 11, 481-94.
- Moran, W.L. 1992: *The Amarna Letters* (Baltimore).
- Neu, E. 1974: *Der Anitta-Text (StBoT 18)* (Wiesbaden).
- 1996: *Das hurritische Epos der Freilassung I. Untersuchungen zu einem hurritisch-hethitischen Textensemble aus Hattuša (StBoT 32)* (Wiesbaden).
- Nissen, H.J. 1999: *Geschichte Alt-Vorderasiens* (Oldenburg Grundriss der Geschichte 25) (Munich).
- Otten, H. 1963: 'Aitiologische Erzählung von der Überquerung des Taurus'. *ZAss* 21, 156-68.
- 1981: *Die Apologie Hattusilis III. Das Bild der Überlieferung (StBoT 24)* (Wiesbaden).
- 1988: *Die Bronzetafel aus Boğazköy. Ein Staatsvertrag Tuthalijas IV (StBoT Beiheft 1)* (Wiesbaden).
- Salvini, M. 1995: 'Una lettera di Hattušili I relativa alla spedizione contro Ḫahḫum'. *SMEA* 34, 61-80.
- 1996: *The Habiru Prism of Tikunani* (Rome).
- Singer, I. 1996: 'Great Kings of Tarḫuntašša'. *SMEA* 38, 63-71.
- 2000: 'New Evidence on the End of the Hittite Empire'. In Oren, E. (ed.), *The Sea Peoples and Their World: A Reassessment* (University of Pennsylvania, University Museum Monograph 108/ University Museum Symposium Series 11) (Philadelphia), 21-33.
- Soysal, O. 1987: 'KUB XXXI 4 + KBo III 41 und 40 (Die Puḫanu-Chronik). Zum Thronstreit Hattušilis I'. *Hethitica* 7, 173-253.
- Tischler, J. 2002: 'Bemerkungen zur Urheimatfrage'. In Fritz, M. and Zeilfelder, S. (eds.), *Novalis Indogermanica* (Festschrift G. Neumann) (Graz), 475-87.
- van den Hout, T.P.J. 1994: 'Der Falke und das Kücken: der neue Pharao und der hethitische Prinz'. *ZAss* 84, 60-88.
- von der Way, T. 1984: *Die Textüberlieferung Ramses' II. zur Qadesch-Schlacht. Analyse und Struktur* (Hildesheim).

von Schuler, E. 1965: *Die Kaškäer* (Berlin).

— 1980: s.v. 'Kaškäer'. *RLAss* V, 460-63.

Ward, W.A. and Sharp Joukowsky, M. (eds.) 1992: *The Crisis Years. The 12th Century B.C.* (Dubuque, IA).

Weidner, E. 1923: *Politische Dokumente aus Kleinasien* (BoSt 8-9) (Leipzig).

Wilhelm, G. 1989: *The Hurrians* (Warminster).

CHAPTER 3

THE WRITTEN LEGACY OF THE HITTITES

Theo P.J. VAN DEN HOUT

Abstract

The Hittite written legacy consists of the total corpus of records preserved from the period of the Hittite empire (*ca.* 1650-1180 BC) as found within its borders. These are clay, wooden and metal tablets as well as some other objects written in cuneiform script in Hittite, Cuneiform Luwian, Palaic, Hattian, Hurrian, Sumerian and Akkadian. Inscriptions on stone in Hieroglyphic Luwian and seals and seal impressions likewise belong here. This chapter discusses this corpus from the point of view of use and organisation.

Philo, magistro meo

INTRODUCTION: SCRIPTS AND LANGUAGES

The written legacy of the Hittite kingdom and empire spans a period of almost 500 years: *ca.* 1650-*ca.* 1180 BC.¹ During that time the Hittite ruling class used two scripts, each with its own language. Hittite is attested as the language of the kings, the extended royal family and their dependents and was written in cuneiform. This largely syllabic script originated in Mesopotamia and had made its first appearance in Anatolia during the period of the Old Assyrian trading posts (*ca.* 1925-*ca.* 1725 BC). However, the Old Assyrian cuneiform variant is thus far exclusively attested in the thousands of documents of the foreign traders and differs from the Hittite type of cuneiform that became current from *ca.* 1650 BC onwards. The latter is usually believed to have been introduced during the reign of Ḫattušili I² and there is no evidence that the Old Assyrian script or language was ever used by the local population for their own

¹ Usually the term 'kingdom' is applied to the older period of Hittite history from its early beginnings to *ca.* 1375 BC while 'empire' is used for the period starting with Šuppiluliuma. For the periodisations of Hittite history, see Genz and Mielke in this volume, pp. 14-19.

² Rüster and Neu 1989, 15.

language before his reign.³ However, when King Anitta of Kaneš/Neša (modern Kültepe) around 1750 BC in his proclamation says that he put the first part of his text in writing one wonders what language and script he used.⁴ The text as we have it in later copies seems to be a genuine Hittite composition⁵ and it has been shown recently that a ductus very close to the later Hittite one was already present – albeit not very widespread, it seems – in the Old Assyrian period.⁶

The majority of the population in Anatolia probably spoke some form of Luwian, a language related to Hittite that had developed its own script, the so-called Luwian hieroglyphs.⁷ This writing system is attested from the 15th century onwards but there are possible precursors that date back to the first half of the 2nd millennium.⁸ This script too was largely and increasingly syllabic but as opposed to the highly abstract cuneiform writing used by the administration it was – at least in the 2nd millennium – still very picto- or logographic with many signs recognisably referring to animate beings or their body parts and objects from daily life. While the Hittite language and its cuneiform script were used for everything the administration wanted to put into writing for its own circles and purposes, it turned to Luwian and its hieroglyphic script for large rock-cut inscriptions meant for public display not just in the capital but spread over the entire empire (see below).⁹ The sometimes exclusively logographic character of these inscriptions raised them beyond the level of a specific language¹⁰ thus making them even more suitable to reach the population at large. The other attested use for the hieroglyphic script is that on seals of Hittite kings and officials recording their name and often titles. Apart from a possible aesthetic reason, the choice of the hieroglyphic script here may have been the use of the seals beyond the circles where Hittite and cuneiform were the main means of communication. This is also the sole category where a simultaneous use of both the cuneiform and hieroglyphic writing systems can be seen: royal seals often combine the royal name in hieroglyphs in the centre

³ However, the spear point found on the acropolis in Kültepe/Neša with Anitta's name and title in Akkadian on it (Özgiç 1956; *Die Hethiter und ihr Reich* 2002, 45, 332) in cuneiform remains an interesting piece of evidence.

⁴ KBo 3.22 obv. 33-34 with duplicate; see Neu 1974, 12-13 and 25-26 for commentary. Whether the tablet mentioned was ever publicly displayed on the city gate is of no importance in this context; cf. Carruba 2003, 112 for more recent literature.

⁵ See Neu 1974 for an edition; and for the text as a genuine Hittite composition, Neu 1974, 132-35.

⁶ Hecker 1992; Klinger 1998.

⁷ Hawkins 1986. For a discussion on the status of Luwian, see Melchert 2003, 11-14.

⁸ See Mora 1991; Hawkins 2000, 3.

⁹ On this, see now van den Hout 2006b.

¹⁰ Hawkins 2003, 140-41.

with the name as well as titles and filiations in cuneiform in rings surrounding the central field. Finally, hieroglyphic signs can be found in graffiti on metal objects.

Besides Hittite and the Luwian language that was written in the hieroglyphic script, several other languages are documented in the tablet collections. Two small corpora attest to the existence of two more relatives of Hittite: Palaic, spoken in the area named Palā (possibly spoken [Plā] and related to classical Blaene) in the Pontic Mountains to the north-west of Ḫattuša and another form of Luwian, only slightly differing from Hieroglyphic Luwian and called Cuneiform Luwian, since it is only attested in that script. Other languages attested in the tablet collections of the Hittite empire are all non-Indo-European: Sumerian, Akkadian, Hurrian and Hattian.¹¹

All the abovementioned sources for these languages functioned and were transmitted within the administrative and political context of the Hittite kingdom and empire. Therefore, the term ‘Hittite’ will only rarely be used here in its restricted linguistic sense as one of the Indo-European languages of the Anatolian subgroup just like Palaic and the two Luwian languages. Rather, it stands for the society that politically and militarily dominated Anatolia for most of the 2nd millennium and in which Indo-European elements (Hittite in its linguistic sense, Luwian and Palaic) had merged early on with the autochthonous Hattian culture and which underwent significant Hurrian and Semitic Mesopotamian influences over the course of its attested existence.¹² The adjective ‘autochthonous’ referring to the Hattian population must be understood here from a Hittite point of view: when the Indo-European migrants entered Anatolia the Hattians were already there. How long they had been there remains unknown.

SCRIPT CARRIERS

The most important script carrier was the clay tablet in various sizes and formats in which signs were impressed with a stylus (Fig. 1). Styli used for clay tablets have not been identified with certainty thus far in excavations in Anatolia which would be understandable if they were made out of reed or some other organic material.¹³ Of the Sumerograms used in Hittite for ‘stylus’ two

¹¹ For the nature of the texts written in these languages, see below. There are also some fragments in one or more unknown languages, see Laroche 1971, no. 831; Corti 2003.

¹² Cf. Güterbock 1957.

¹³ For two possible examples made of bone but dating to the Old Assyrian period, see Boehmer 1972, 197; for possible styli to write the hieroglyphic script, see below.

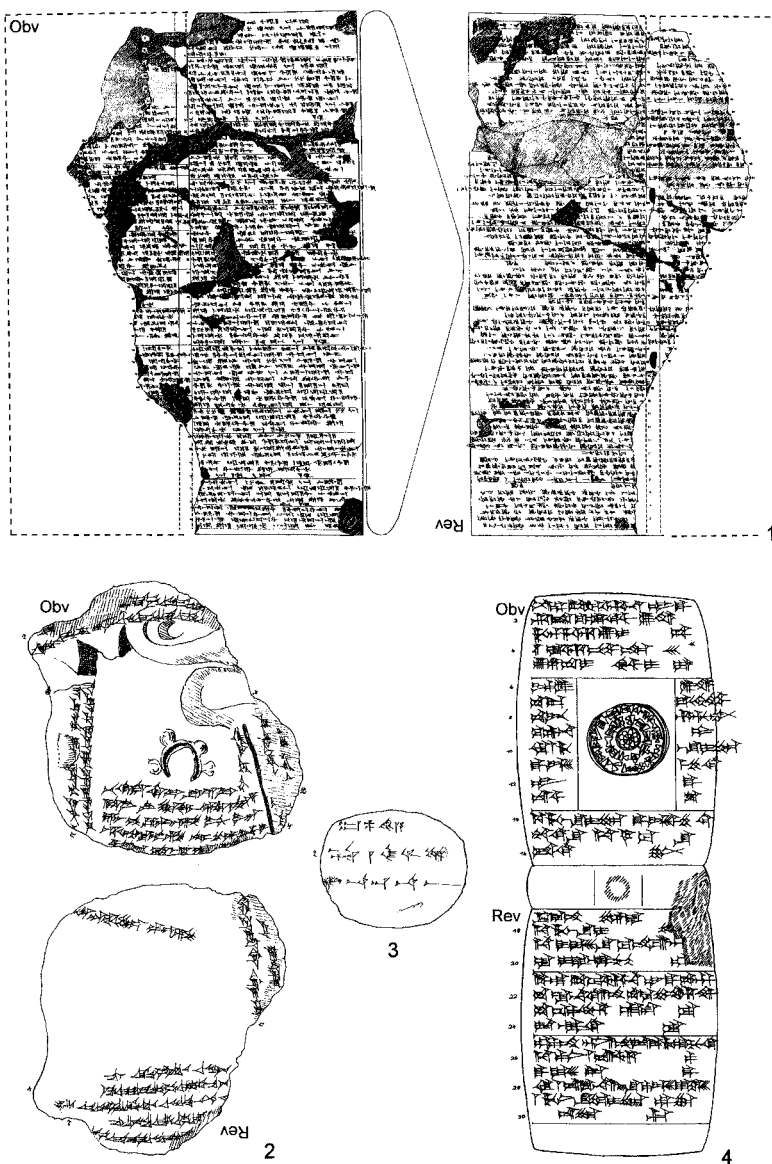


Fig. 1. (1) Typical clay tablet with columns (vertical lines) and paragraphs (horizontal lines). KBo 4.14. Dimensions: $33 \times 21 \times 6.5$ cm. On the back between the column lines the so-called 'firing holes' can be seen (template T.P.J. van den Hout); (2) 'Oracle liver' – Clay tablet in the shape of a sheep's liver, inscribed with omens. KUB 37.223 (321/d).

Greatest diameter about 12 cm (after F. Köcher, *Literarische Texte in akkadischer Sprache* [KUB 37] [Berlin 1953], no. 223); (3) Small 'etiquette'. KUB 30.75 (803/c).

Greatest diameter about 6 cm (after H. Ehelolf, *Texte verschiedenen Inhalts [vorwiegend aus den Grabungen seit 1931]* [KUB 30] [Berlin 1939], no. 75);

(4) 'Land deed' with seal impression on the front. Bo 90/758.

Dimensions: $10.4 \times 8 \times 4.4$ cm (after Rüster 1993, fig. 1).

(GI É *TUPPI* or GI É.DUB.BA lit. 'reed of the tablet house') at least refer to 'reed' (GI) although this does not necessarily imply they were made of that material.¹⁴ One of the contexts definitely points at writing cuneiform.¹⁵ Another term is the word for needle (ZI.KIN.BAR = Hittite *šepikušta-*) used once in connection with a silver writing board (see below).¹⁶ Sometimes signs were scratched rather than impressed into the tablets after they had already dried (Fig. 4.1 below).¹⁷ There is also some scarce evidence for the use of ink or ink-like substances on clay.¹⁸

Usually, tablets are rectangular, in 'portrait' orientation, ranging from just a few centimetres to large ones measuring up to about 35-40 cm in length and some 25 cm in width (Fig. 1.1). In the centre they can be up to 6 cm thick tapering off towards the edges. The obverse is normally flat, the reverse showing a slight curve.¹⁹ The smallest tablets may have an oblong shape or 'landscape' orientation or may be round (Fig. 1.3).²⁰ A special 'pillow-shaped' format was in use for land deeds (Fig. 1.4) that, moreover, carried a seal impression in the centre of the obverse (see below).²¹ Sealed bullae were once attached to these deeds, hanging from cords that had been inserted in the inside of the tablet when it was formed.²² Another special group is that of the oracle tablets roughly recalling the shape of an animal's liver on which omens have been recorded (Fig. 1.2).²³

An average rectangular tablet (Fig. 1.1) is divided into two vertical columns on either side and turns over across its lower horizontal axis.²⁴ Columns are mostly separated by double vertical lines but especially in the Old Kingdom single lines were used as well. There are also tablets with just one column²⁵ or three or occasionally four columns per side. Sometimes a one-column tablet is inscribed on one side only, which has been taken as a sign that the tablet was

¹⁴ The GI É *TUPPI* in KUB 17.20 II 25 is said to be made of silver.

¹⁵ HKM 71, left edge 1, 2; see Alp 1991, 236-37, 340.

¹⁶ KUB 17.20 II 22; see Gurney 1940, 90. Another occurrence is KBo 18.172 rev. 13 (1 ZI.KIN.BAR LÚ.DUB[...] 'one stylus of a/the scribe').

¹⁷ See Otten 1958, 25; for a picture, see Otten 1955, 77-78; see also Ünal 1987, 475.

¹⁸ Kořak 1988, 147.

¹⁹ Bittel and Naumann 1952, 53, Abb. 11b.

²⁰ For small oblong tablets, see, for example, Neve 1993, 49, Abb. 126. Round tablets are mostly the labels used to identify certain compositions in the ancient tablet collections (see below) (Otten 1955, 76). For somewhat larger oblong tablets, see IBoT 1.30 (for text and literature, see Houwink ten Cate 1992, 87, 132) and KUB 56.17 (Klengel 1988, 101-10).

²¹ For photographs, see Neve 1993, 60-61, Abb. 163-164, 166a-b.

²² Güterbock 1997, 28-30.

²³ Güterbock 1935, 31, Abb. 19.

²⁴ For an exception, see KUB 44.4 (Klengel 1973, v).

²⁵ van den Hout 1995, 9 n. 19 with literature.

used for display purposes.²⁶ In most cases upper and lower edges are not inscribed but the left edge frequently was (see also below), with text for which a scribe apparently did not want to start a fresh tablet. Texts are commonly divided into meaningful entities or paragraphs by single lines drawn across the width of a column. Double lines signal a real break in contents from the foregoing text. Longer horizontal and sometimes vertical lines extending over the entire width and/or length of a tablet along the edges were used to encase the entire text on either side of a tablet. No systematic study has been made as yet of tablet formats and layouts or their correlations with genres or functions and their possible chronological development, but such links certainly existed.²⁷

Apart from one possible but apparently isolated example,²⁸ there is no evidence for the use of clay envelopes as we know them from Mesopotamia or from Anatolia in the time of the Old Assyrian trading posts. Yet, the 'opening' of a tablet is once referred to in a text²⁹ and it is to be expected that, when being transported, tablets were placed in some kind of a cover. Leather bags, for instance, may very well have been used. Note that sealed bullae sometimes contain an impression of leather or other materials.³⁰

Little to nothing is known about the deliberate firing of tablets in antiquity. It is certain that many tablets were simply sun-dried and got baked only secondarily when the building in which they were kept was destroyed by fire. Some tablets, however, show deliberate holes that have been explained as keeping the tablets from bursting while being fired (Fig. 1.1).³¹ But what the criterion was for deliberate firing remains unknown.³²

Besides clay tablets the texts inform us of the existence of metal and so-called 'wooden tablets'. Metal tablets are said to have been made in gold, silver, bronze and iron, and such copies were probably made only of very important texts, serving as engrossed copies. Signs must have been 'punched' in with an instrument that imitated the impression left by a normal stylus in a clay tablet. Such metal tablets are attested for treaties, loyalty oaths and, possibly, a land grant, but also for historical texts.³³ Only one bronze example has survived so far, containing the treaty of the Great King Tuthaliya IV

²⁶ Meriggi 1962, 67, Houwink ten Cate 1983, 105.

²⁷ A Dutch dissertation project on this topic has been started by Willemijn Waal.

²⁸ HKM 86a.

²⁹ KBo 18.48 obv. 17 (see Hagenbuchner 1989a, 32-33).

³⁰ Herbordt 2005, 32-39.

³¹ For example KBo 4.14, KBo 6.4, KUB 27.67; see Bittel and Naumann 1952, 55.

³² Bittel and Naumann 1952, 55; Wilhelm 2002, 351. For general information, see Seeher 2003, 10.

³³ See Siegelová 1993, 117a for a listing of metal tablets mentioned in the texts; for the land grant, see van den Hout 2003a, 176.

(ca. 1240-ca. 1210 BC) with Kuruntiya, viceroy in the southern province of Tarḫuntašša (Fig. 2).³⁴ Treaties are known to have been deposited 'before the deity' and we may assume that all such engrossed copies in metal were kept there. Another copy was handed to the main party involved in the document drawn up. Compare the final remark in the bronze tablet just mentioned:

These tablets are made in seven copies. They are sealed with the seal of the Sun Goddess of Arinna and with the seal of the Storm God of Ḫatti. One tablet is deposited in front of the Sun Goddess of Arinna, one tablet before the Storm God of Ḫatti, one tablet before (the deity) Lelwani, one tablet before (the goddess) Ḫepat of Kizzuwatna, one tablet before the Storm God *piḫaššašši*, one tablet in the palace before (the deity) Zithariya while Kuruntiya, king of Tarḫuntašša, has one tablet in his residence.³⁵

The place of deposition 'before' the Sun Goddess and the Storm God of Ḫatti may have been the double temple ('Temple 1') in the Lower City of Ḫattuša but no metal tablets were reportedly ever found there. It is not unlikely, however, that these copies were taken by the ruling class upon abandoning the capital somewhere after 1200 BC. Others are likely to have been melted down at some point.

By 'wooden tablets' we mean writing boards that contained a recessed part filled with wax in which signs were drawn or impressed.³⁶ Two such boards were probably fitted together into a diptych with hinges of some sort and a sealable closing mechanism to protect the writing surface from being damaged or forged. Whether polyptychs existed in Anatolia is unknown. From the period of the Hittite empire only one example exists, found just off the Lycian coast at Ulu Burun as part of the cargo of a ship (Fig. 3.1).³⁷ Since this writing board contained no script and the ship's provenance is unknown, and given the fact that wooden tablets were widely used in the ancient Near East, it is impossible to draw any conclusions as to what language it ever served.

The question of language can hardly be separated from the script used. It is often assumed that wooden tablets were inscribed with the abovementioned hieroglyphic script. However, because the one-to-one relation between script

³⁴ Otten 1988. The find-spot of this bronze copy is clearly secondary: it was found buried some 30 cm under the Hittite pavement near the Sphinx Gate (Otten 1988, 1). Following Otten (1988, 54-55) this particular tablet may have been the one that was handed to the treaty partner Kuruntiya and must have been brought back to Ḫattuša at a later moment. Whether the other six copies were also made in bronze remains unknown but they were deposited 'before' as many deities.

³⁵ Bo 86/299 IV 44-51, see Otten 1988, 28-29.

³⁶ Symington 1991; Marazzi 2000; Postgate 2003, 133-36.

³⁷ Payton 1991.

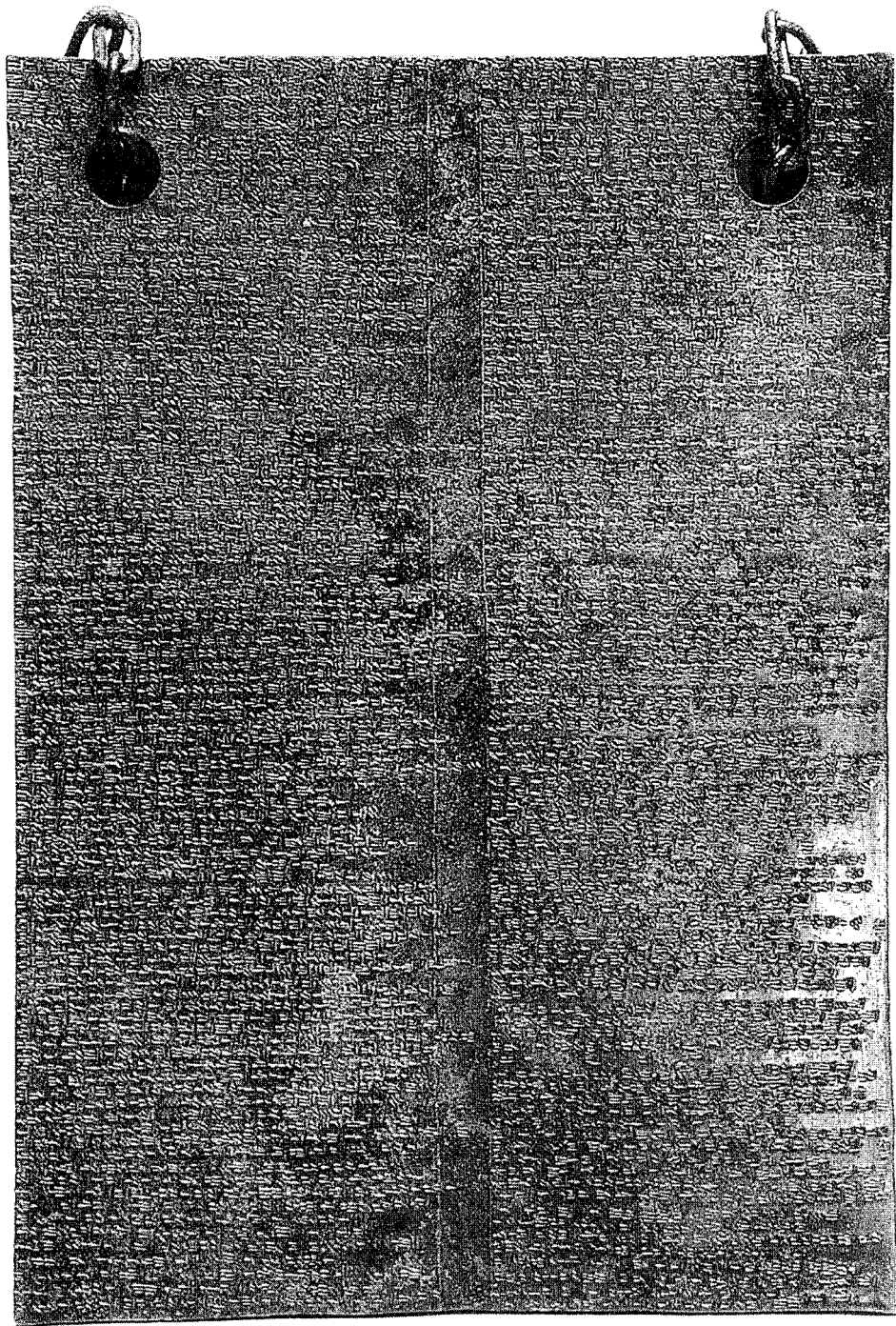


Fig. 2. Bronze tablet from the Upper City in Boğazköy-Hattuša.
Dimensions: $35 \times 23.5 \times 0.8/1$ cm, weight 5 kg (after Seeher 2003, fig. 7).

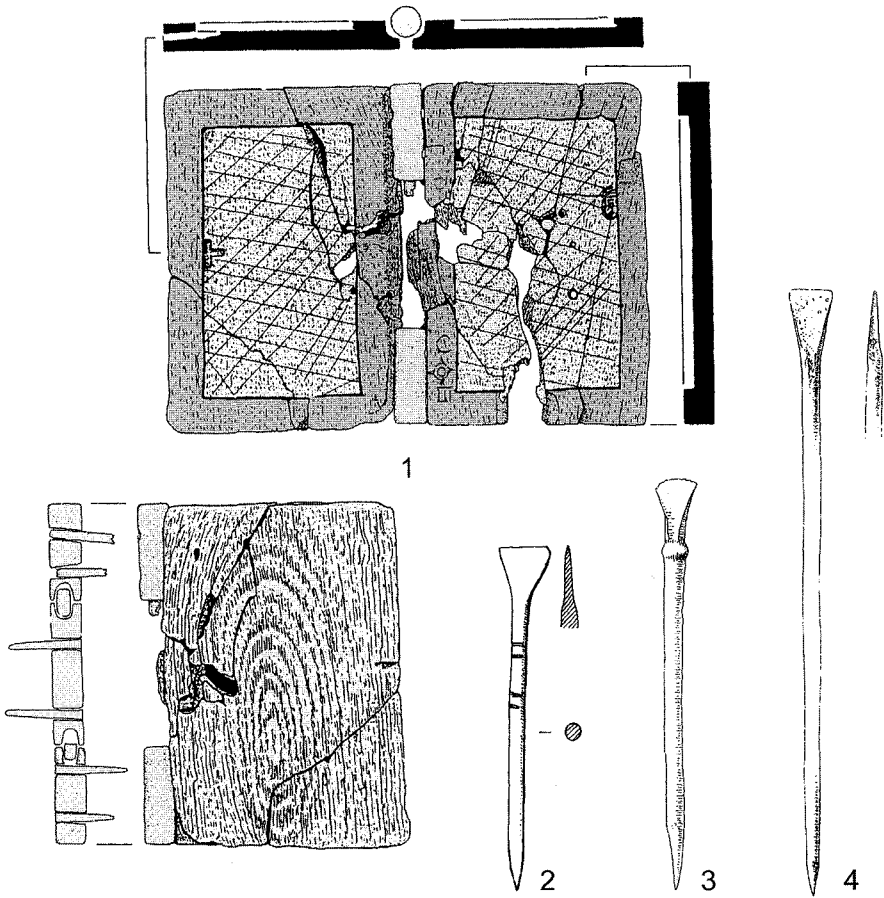


Fig 3. (1) Writing board from the shipwreck of Ulu Burun, situated on the southern coast of Turkey. The surfaces for writing originally were coated with wax. Dimensions of the tablets: 9.5×6.2 cm (after Payton 1991, fig. 2); (2-4) Bronze styli from Boğazköy.

Length of the larger object: 16.5 cm (after Boehmer 1979, Taf. XIX.3397; 1972, Taf. XLI.1214, 1218).

and language, that is cuneiform and Hittite on the one hand and hieroglyphics and Luwian on the other, is very strong and since there is no evidence that the hieroglyphic script was ever used to write Hittite, this is problematic. What physical evidence we have for the use of hieroglyphic writing by the administration points to its use for reaching a wider audience, that is either through monumental inscriptions or on seals. Moreover, clay tablets written in cuneiform mention the fact that they were sometimes copied from or written on the

basis of a wooden tablet.³⁸ The only possible evidence adduced for the writing of hieroglyphic script on either clay or wax is some 17 bronze objects with one pointed end and a flattened surface on the other as well as some of horn, bone or ivory (Fig. 3.2-4):³⁹ if indeed styli, it seems more likely they were used for writing hieroglyphic signs than for writing cuneiform.⁴⁰ Lacking the triangular end needed to get the proper shape of cuneiform signs they seem unfit for this script.⁴¹

Finally, there are a few cuneiform inscriptions on metal objects like an axe,⁴² a sword⁴³ and a hay fork.⁴⁴

THE HITTITE WRITTEN LEGACY

As can be inferred from the above, the Hittite written legacy consists of all preserved texts recorded during the period of the Hittite kingdom and empire in cuneiform on clay tablets, the one bronze tablet and some objects as well as of the Luwian inscriptions recorded on seals and seal impressions, on stone surfaces and metal objects in the hieroglyphic script. It should be mentioned at this point that a number of drawings on clay tablets have also been preserved. Some of these do not so much belong in an overview of Hittite art but were meant as a technical illustration to the text and as such can be considered part of the latter (Fig. 4.2).⁴⁵ Finally, there is a small body of pottery marks that probably conveyed an as yet unclear message.⁴⁶ In the following I will not

³⁸ Symington 1991, 115-16; Marazzi 1994, 140-42.

³⁹ Boehmer 1972, 133-34 with pl. XLI (nos. 1206-1218) for the metal ones; 196-97 with pl. LXXIII (nos. 2044-2050) for the metal; 1979, 31 with pl. XIX (nos. 3395-3398A) for the non-metal ones; 50-51 with pl. XXX (nos. 3668-3673) for the non-metal. See also Marazzi 1994, 136, 160.

⁴⁰ Boehmer (1972, 133-34) sees the pointed end as the one with which the signs were written with the flattened end of the metal styli for erasing; likewise Symington (1991, 114-15 with n. 31). *Die Hethiter und ihr Reich* (2002, 353), however, although not saying for what script the objects might have been used, describes the flattened end as 'Das Funktionsende' which becomes 'zum hinteren Ende spitz'.

⁴¹ Marazzi 1994, 136; Seeher (2003, 8) claims that cuneiform can be used 'only with difficulty on wax-coated tablets' but this seems difficult to maintain in view of the Mesopotamian evidence for writing boards.

⁴² Salvini 1993.

⁴³ Ertekin and Ediz 1993; Ünal 1993.

⁴⁴ Yalçıklı 2000. It remains puzzling why a hay-fork would have had a cuneiform inscription identifying the object as such.

⁴⁵ I am referring here to the sketch capturing the imaginary field of an augur in bird oracles in KUB 49.60 (see Haas and Wegner 1996, 108). Whether the lines in KBo 41.141 (Haas 2000, 42) are part of a similar sketch remains uncertain since they are less specific and the preserved text does not contain any bird oracles. For other drawings on Hittite tablets, see Ünal 1989.

⁴⁶ Seidl 1972.

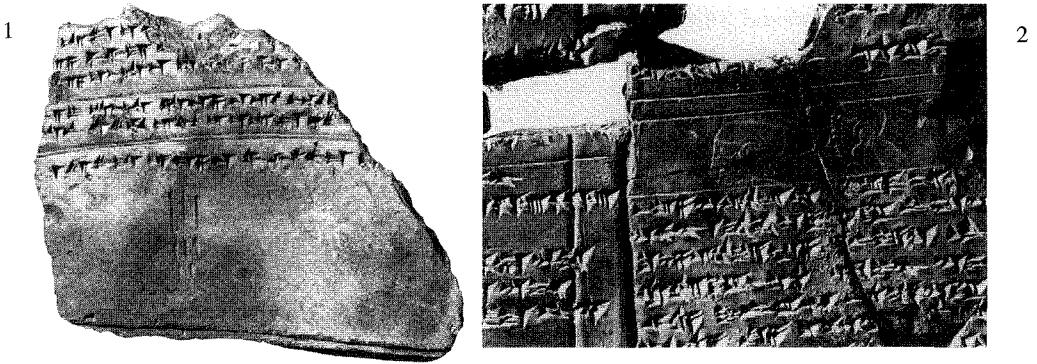


Fig. 4. (1) Secondarily incised numerical signs on a clay tablet from Boğazköy. KUB 34.68 (after H. Otten, 'Die inschriftlichen Funde'. *MDOG* 88 [1955], 34, Abb. 15); (2) Incisions of human heads on a clay tablet from Boğazköy. KUB 38.3 II (after H. Klengel, *Hattuschili und Ramses: Hethiter und Ägypter – ihr langer Weg zum Frieden* [Mainz 2002], Abb. 39).

evaluate the texts from a literary standpoint⁴⁷ but attempt to sketch the corpus from a more functional point of view, that is looking at their use and organisation. The cuneiform material will be reviewed first, then the hieroglyphic.

THE CUNEIFORM SOURCES

Although no exact number is known, there are to date probably around 30,000 clay tablets, that is mostly fragments. Since excavations continue to yield new texts, this number keeps growing. The bulk of the texts come from the former capital, Hattuša, which until the 1970s was practically the only site producing tablets in some numbers. Since then several other collections have come to light at Maşat Höyük-Tapikka (?), Ortaköy-Şapinuwa (?) and Kuşaklı-Sarissa. Besides these there have been incidental finds in Alaca Höyük, İnandık, Kayalıpınar in Central Anatolia, Tarsus in the south, and Ugarit, Emar and Alalaḥ at the fringes of the empire in the south-east (Fig. 5 below).⁴⁸ Tablets and fragments – either written in Hittite or having originated from the Hittite administration – have been found even as far as Dur Kurigalzu in Iraq as well as in Akhetaten (Tell el-Amarna) and Pi-Ramesses in Egypt. Finally, there are fragments of unknown provenance.

⁴⁷ For this see, for instance, Güterbock 1964; 1978; Archi 1995; also Souček and Siegelová 1996, vol. 1, 275-343 (*Schrift-Epigraphik-Schrifttum*), vol. 3, 247-69 (*Literatur-Mythologie-Vergleichende Literaturgeschichte*).

⁴⁸ For a map with all these find-spots, see Müller-Karpe 2000, 355.

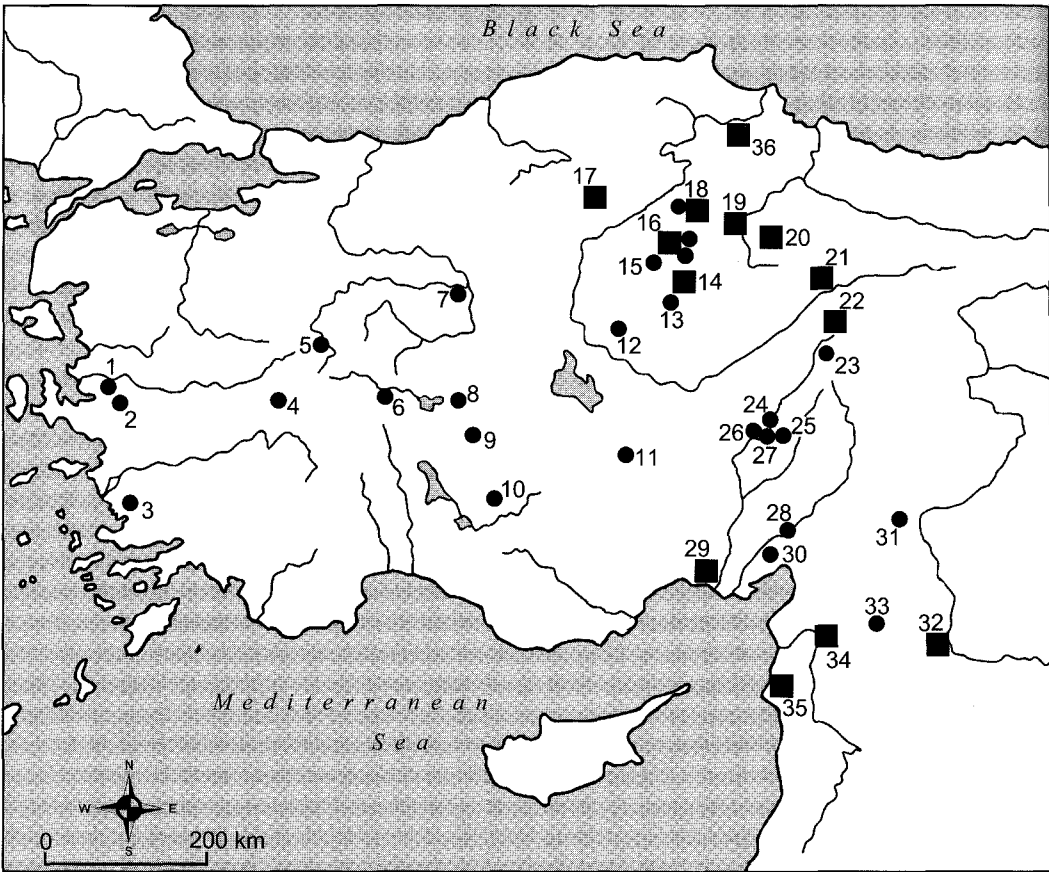


Fig. 5. Map of find-spots of Hittite clay tablets (squares) and inscriptions in Luwian hieroglyphs from the 2nd millennium (circles): (1) Sipylus, (2) Karabel, (3) Suratkaya/Latmos, (4) Çivril, (5) Beyköy, (6) Kocaoğus, (7) Yağrı, (8) Yalburt, (9) Köylütolu, (10) Hatip, (11) Emirgazi, (12) Malkaya, (13) Karga, (14) Yozgat?, (15) Delihasanlı, (16) Boğazöy-Hattuša/Yazılıkaya, (17) İnandiktepe, (18) Alaca Höyük, (19) Ortaköy-Sapinuwa, (20) Maşat Höyük-Tapikka, (21) Kayalıpınar, (22) Kuşaklı-Sarissa, (23) Karakuyu, (24) İnankulu, (25) Hanyeri, (26) Fraktın, (27) Taşçı, (28) Hemite, (29) Tarsus, (30) Sirkeli, (31) Cağdın, (32) Meskene-Emar, (33) Halab/Aleppo, (34) Tell Açana-Alalah, (35) Ras Şamra-Ugarit, (36) Oymaağaç (design and layout D.P. Mielke).

These texts cover a wide variety of genres and stem from tablet collections that belonged to the ruling elite. Private collections like those well known from Mesopotamia have not been identified so far in Anatolia. Looking at the collections as a whole a dichotomy can be seen.⁴⁹ In the offices of the Hittite empire compositions of certain types were constantly copied and/or subjected to continuing revision while the keepers of the tablets also held on to many of the older versions. Other compositions existed in single copies only. Arranging the texts from Ғattuša along these lines we get the following picture (the CTH numbers refer to the *Catalogue des textes hittites*, a standard listing of Hittite compositions by category by Emanuel Laroche⁵⁰) to be discussed in the next two sections:

A. Texts with multiple copies	B. Texts in single copies
• historical narrative, treaties, edicts (CTH 1-147, 211-216) • instructions (CTH 251-275) • laws (CTH 291-292) • celestial omnia (CTH 531-535) • hymns and prayers (CTH 371-389) • festivals (CTH 591-721) • rituals (CTH 390-500) • mythology, Anatolian (CTH 321-338) and non-Anatolian (CTH 341-369) • Hattian, Palaic, Luwian, Hurrian texts (CTH 725-791) • hippological texts (CTH 284-287) • lexical lists (CTH 299-309) • Sumerian and Akkadian compositions (CTH 310-316, 792-819)	• letters (CTH 151-210) • land deeds (CTH 221-225) • lists and rosters (CTH 231-239) • economic administration (CTH 240-250) • court depositions (CTH 293-297) • cult inventories (CTH 501-530) • non-celestial omnia (CTH 536-560) • oracle practice (CTH 561-582) • vows (CTH 583-590) • tablet collection shelf lists (CTH 276-282) • tablet collection labels (CTH 283)

⁴⁹ van den Hout 2002.

⁵⁰ = Laroche 1971; supplements in Laroche 1972; 1975. This work is now being replaced by the online *Konkordanz der hethitischen Keilschrifttafeln* (I-LX) by Silvin Košak on the web site *Hethitologie Portal Mainz* at <http://www.hethport.uni-wuerzburg.de/hetkonk/>. Hittite texts are mostly published in two large series, *Keilschrifttexte aus Boghazköi* (Berlin 1916-) and *Keilschrifturkunden aus Boghazköi*, vols. I-LX (Berlin 1921-1990). Besides these there are several smaller series as well as incidental publications. For the texts from Mašat and Kušaklı, see below.

The Cuneiform Sources: Texts with Multiple Copies

It is in Group A that we find compositions of all periods both in contemporary and later copies. The presence of fragments in Old (*ca.* 1650-*ca.* 1500 BC) and Middle (*ca.* 1500-*ca.* 1350 BC) Hittite script implies that texts were often kept filed for hundreds of years. The constant copying, editing and updating of these compositions shows that there was a constant need for them and that they were considered important enough to be handed down to future generations.

The majority of them fall under the category of religious texts. The festivals and rituals are scenarios or scripts that were pulled from the tablet rooms whenever the need arose. The administrative and prescriptive character is clear, for instance, in the KILAM festival⁵¹ or the Hittite royal funerary ritual⁵² where the compositions consist of several distinct series: 1) a basic and comprehensive description of the entire event in terms of time, place, and people and their movements and acts; 2) a 'liturgy' containing mainly the texts to be spoken with brief directions for who is to say what, when and where; 3) a ration list detailing per day or event the ingredients needed for the festival or ritual; 4) an excerpt or outline characterising each day in one or two sentences. The purpose of the latter is not clear: perhaps it was simply for the logistics of tablet-keeping (see below). The indigenous Anatolian myths, as well as most of the Hattian,⁵³ Palaic,⁵⁴ (cuneiform) Luwian⁵⁵ and Hurrian⁵⁶ texts, functioned entirely within the cult and the sphere of magic incantations. Recitations in these languages were often inserted into Hittite texts as lines to be spoken by some of the participants. Hymns and prayers seem to have served mostly as models for *ad hoc* compositions in times of need. This is illustrated by a hymn to the Sun God that we find used with variations in at least five different prayers.⁵⁷

The prescriptive character of treaties, edicts, instructions and laws is likewise clear and older versions were used in drafting new ones. In the case of treaties, for instance, the often compilatory character can betray a redactional history spanning several generations.⁵⁸ International treaties are a major source

⁵¹ Singer 1983, 40-51; for a complete edition, see Singer 1984.

⁵² Kassian, Korolëv and Sideltsev 2002 for an edition of the composition; for the different series, see van den Hout 1994, 58-59.

⁵³ For the most recent overview of Hattian studies, see Soysal 2004.

⁵⁴ For the text corpus and interpretation, see Carruba 1970; 1972.

⁵⁵ For the text corpus, see Starke 1985; for the lexicon, see Melchert 1993; see also Hawkins 2003, 138-39.

⁵⁶ For a brief overview of Hurrian texts from Boğazköy, see Wegner 2000, 23-24; texts are edited in the series *Corpus der hurritischen Sprachdenkmäler I. Abteilung, Die Texte aus Boğazköy* (Rome 1984-).

⁵⁷ Singer 2002, 30-31, 44-45, 49-50.

⁵⁸ See, for instance, Carruba 1988; van den Hout 1989.

for Akkadian used in the Hittite empire since it was the international diplomatic language.

Less obvious may be the role of historical prose and texts of foreign origin, that is the omen compendia, the lexical lists as well as the translated or adapted and non-translated fictional writings like myths, epics and wisdom literature. To start with historical prose,⁵⁹ we have to distinguish between documents that, although we are used to treat them as historical sources, are clearly propagandistic and those for which this is less obvious. From one text of the former group we have parts of a Hittite cuneiform as well as a Hieroglyphic Luwian version.⁶⁰ The latter was carved on the rocky outcrop of Nişantepe in the Upper City of Hattuša and is known as the Nişantaş inscription (see below). In this case the Hittite version is likely to have been the draft after which the hieroglyphic inscription was produced. If so, this is a striking example of the elite using the hieroglyphic script and its Luwian language to reach a larger public (see above). Compositions, on the other hand, like King Muršili II's (*ca.* 1318-*ca.* 1295 BC) biography of his father, known as the 'Deeds of Šuppiluliuma', or his own annals and those of other kings, although of course highly biased, are less straightforwardly propagandistic, that is aimed to impress a larger audience than texts of the first group. The sheer length of these compositions already makes their display as public inscriptions in Hieroglyphic Luwian unlikely. That some of these writings had a religious dimension is clear from, for instance, the epilogue of the Ten-Year Annals of Muršili II: he refers to the Sun Goddess of Arinna, his patron deity, as the dedicatee of his work. The fact that the 'Deeds of Šuppiluliuma' was apparently meant to be executed in bronze points in the same direction (see below). It seems difficult for us to accept, though, that such works would have had no other use than being deposited in the temple to bear witness of divine support. Hittite texts sometimes do contain hints at public readings of certain texts and perhaps we should suppose a similar use of such historical accounts.⁶¹ Apart from these considerations it is clear that such works, just like treaties and similar texts, were composed after careful consultation of other historical records like letters, field reports, treaties and earlier historical prose. So, as much as their composition was helped by earlier records, they themselves were meant to provide a source for future consultation.

The 'Sitz im Leben' of the foreign texts whether still in the original language, translated or adapted is another problem. A rather consistent difference

⁵⁹ For an overview of the material, see Hoffner 1980.

⁶⁰ Güterbock 1967.

⁶¹ For different views on this, see Cancik 1976, 54-55; Hoffner 1980, 325-26; Roszkowska-Mutschler 2002; Gilan 2005.

in find-spot for the original language versions *vis-à-vis* the translated and adapted ones (see below) suggests a difference in use as well. A common explanation for the presence of Sumerian and Akkadian compositions is that of use in the training of scribes based on Mesopotamian models. Although we have no information on how scribes were educated in Hatti this may be valid at least partly for the lexical lists: scribes did need some knowledge of Akkadian and Sumerian.⁶² The fact alone that some were expanded to include a Hittite column seems to indicate some practical purpose. In general, however, the extent of linguistic elements from these two languages in Hittite texts hardly exceeds the use of phrases and formulas and does not require real grammatical knowledge. This is confirmed by the texts themselves in the sense that the average Hittite scribe often seems to lack even the most basic Akkadian language skills when using, for instance, the Akkadian accusative case to indicate the subject of a clause. For the untranslated texts it is, moreover, likely that native Mesopotamians served as specialists at the Hittite court. They were probably largely responsible for monolingual Akkadian compositions like the international treaties and correspondence or the literary works considered here, and may have trained specifically selected local scribes.⁶³ Although it is, of course, possible that untranslated literary Sumerian and Akkadian texts were meant as tools for training those native Hittite scribes, the find-spot of these works seems to point to what may have been a more dormant existence (see below).

The situation for the numerous Hurrian compositions is different. In the later 15th century there was a clear increase in Hurrian influence noticeable especially in the considerable corpus of monolingual Hurrian texts. This increase may well have gone hand in hand with a sizeable presence of native speakers of Hurrian in the capital. But unlike the Sumero-Akkadian literature, most of these Hurrian compositions are not texts of tradition: they mainly concern contemporary rituals. A far smaller number contain fragments of myths and epics like the Kumarbi cycle or the Gilgamesh epic. A relatively recent find is that of the Hurrian-Hittite bilingual with historical and mythological episodes and parables.⁶⁴ Similar in character to the majority of Hurrian compositions are the already mentioned Palaic and Luwian texts. They are mostly incantations with sometimes mythological inserts and were part of Hittite cult practices.

Different again is the situation of Hattian. The Indo-European Hittites and the autochthonous Hattians merged and assimilated to a large extent during the later 3rd and earlier 2nd millennium. In this process the Hittite newcomers

⁶² See most recently Beckman 2001, 86.

⁶³ Beckman 1983. Often it is difficult to assess whether an Akkadian tablet was imported or written in Hattuša (see Wilhelm 1992; Klinger 1998).

⁶⁴ Neu 1996; Wilhelm 2001.

took over the Hattian pantheon and its cult with part of the pertinent lexicon. Linguistically, however, the Hittites were dominant to the extent that Hattian seems to have disappeared from at least daily life in the capital at a relatively early stage. Whether and for how long Hattian may have remained a living language in the countryside is impossible to say at this point, but the quality of the textual transmission by the court scribes suggests that for them Hattian was a dead language almost exclusively used for cultic purposes.⁶⁵

That there was a certain familiarity with foreign literary works among Hittite scribes is seen in the occasional use of similes or images in Hittite compositions that can be traced back to these sources. This familiarity may have been gained, however, not only through the original language versions but also through translations, adaptations and abridged versions of literary works such as the *Gilgamesh* epic. This shows that such works were not merely collected for the sake of collecting and may have had more than a curricular use.⁶⁶ Were these compositions read out loud as well on certain occasions?

The collections from settlements outside *Ḫattuša*, that is those in *Maşat Höyük* and *Kuşaklı*, contain little belonging to the group of compositions with multiple copies. All told, one out of the 117 texts from *Maşat* belongs to the so-called vanishing deity myths of Anatolian origin.⁶⁷ It is an isolated find from the 13th-century Level I and similar passages can be found in the *Boğazköy* material. The excavations in *Kuşaklı* yielded two festival fragments among 47 texts found in Building A on the acropolis.⁶⁸ They belong to an original series of four 13th-century tablets of a Spring Festival to be celebrated when the Hittite king visits the town. Some more (Middle Hittite) fragments of a cultic nature came to light in Building D.⁶⁹ All texts from both settlements have close parallels in the corpus known from *Boğazköy* and thus illustrate how the central administration of the capital dominated official local cults.

The reportedly much larger collection in *Ortaköy* seems to contain more compositions like lexical lists, prayers, rituals and festival descriptions, including several bilingual texts, but so far only one lexical list (Sumerian-Akkadian-Hittite) and some Hittite and Hurrian ritual fragments from early surface finds have been published.⁷⁰ In general the *Ortaköy* corpus too seems

⁶⁵ Soysal 2004, 12-19.

⁶⁶ For the Hittite retelling of the *Gilgamesh* epic, see Beckman 2000. Parts of a Hurrian version have been found in *Boğazköy* as well. For the problems concerning the position of the hippological texts, see van den Hout 2002, 87-72.

⁶⁷ Güterbock 1986.

⁶⁸ *KuSa* 1 and 2: see Wilhelm 1997, 17-19.

⁶⁹ Wilhelm 2002.

⁷⁰ For the lexical list, see Süel and Soysal 2003; for the ritual fragments, see Ünal 1998, 45-65; for the texts from *Ortaköy* in general, see Süel 1992; 1999.

to reflect closely the collections known from Ḫattuša and to contain little independent material.⁷¹

The Cuneiform Sources: Texts with Single Copies

The texts of which we have, as a rule, just single copies, date with some clear exceptions to the latest period of the Hittite empire. These are the texts that were usually discarded when they were no longer of relevance to the administration. They reflect the daily business of the empire: internal and external correspondence,⁷² they record legal (depositions),⁷³ oracular⁷⁴ and religious (vows⁷⁵) proceedings, economic administration and inventories of state holdings,⁷⁶ religious administration in the form of so-called cult inventories,⁷⁷ cadastral records⁷⁸ and local logistics (tablet collection management,⁷⁹ lists and rosters). The rate at which these documents were discarded is likely to have varied by type. Tax-related records may have been destroyed fairly soon after a fiscal period had ended but letters, certainly correspondence that had political importance or oracle inquiries involving high profile individuals were to be kept for a longer time. We owe the preservation of all these texts to the fact that the capital was abandoned not long after 1200 BC. As a consequence, the overwhelming majority of these texts date to the last decades of the Hittite capital.

The few texts in these categories that are of older date survive through archaeological coincidence or were saved from destruction for special reasons. A very clear exception as a group is that of the land grants better known by the term *Landschenkungsurkunden*.⁸⁰ They all stem from the period between ca. 1500-ca. 1400 BC and were evidently not subject to regular recycling. These documents form a special group not just chronologically but also in wording, format and storage. They record bequests of large portions of land including real estate by the Hittite king to members of the extended royal family and are written in Akkadian formulas with an occasional Hittite word inserted. The tablets are thicker than usual with a pillow-like shape and have a royal seal in the middle of the obverse (Fig. 1.4 above).⁸¹ Originally they had sealed bullae attached

⁷¹ Ünal 1998, 10.

⁷² Hagenbuchner 1989b; Edel 1994.

⁷³ Werner 1967.

⁷⁴ van den Hout 2003b.

⁷⁵ de Roos 1984.

⁷⁶ Košak 1982; Siegelová 1986.

⁷⁷ Hazenbos 2003.

⁷⁸ Souček 1959; Paroussis 1985.

⁷⁹ Laroche 1971, 153-93; Hoffner 2002.

⁸⁰ Riemschneider 1958; Rüster 1993.

⁸¹ For photographs, see Neve 1993, 33, Abb. 83.

to them, possibly one for each witness present but those have not been preserved.⁸² The land grants were kept as a group and are found together with rather large collections of sealed bullae of the period following that of the *Landschenkungsurkunden*. The latter bullae must have been attached once to other tablets or uninscribed objects. Because the land grants and the bullae are chronologically complementary it has been suggested that the bullae were affixed to land grants that were recorded on wooden tablets which have not survived. This does not explain, however, why in these cases the bullae were kept with the alleged wooden writing boards whereas they were removed from the older ones that were recorded on clay. Moreover, given the importance that the Hittites seem to have attached to these documents – keeping them from the regular administrative destruction of records and thus storing them for hundreds of years – it is unlikely that they would have decided to start recording the documents on the much more vulnerable carriers with waxed surfaces that could be forged more easily. Also, it has been noted that the bullae show traces of having been attached to leather, wood or reed, making it likely that they had once sealed, at least partly, perishable goods of some sort. The true nature of these bullae and their relation, if any, to the land deeds is a problem that still awaits a satisfactory explanation.

Another problem is posed by the non-celestial omen compendia. These texts are clearly Mesopotamian imports and would seem much more at home in the other group among the translated and non-translated foreign literature. Yet, they were almost never copied as opposed to the similarly imported theoretical texts about celestial phenomena.⁸³ The latter were somewhat reworked, however, to fit the Hittite situation and there are indications that they were consulted.⁸⁴

The Hittite cuneiform texts that come from places outside Ḫattuša are not only interesting for the different perspective but also because they illustrate the high degree of centralisation imposed by the capital. The excavations at Maşat Höyük brought to light a small and coherent administrative corpus of a local town in the northern zone regularly exposed to raids by Kaška tribes from the Pontic Mountains. It consists of 97 letters exchanged among the Hittite king and several of his officials⁸⁵ as well as 18 administrative documents recording lists of people, various inventories and a small oracle tablet.⁸⁶ All these date to the first half of the 14th century BC and offer an invaluable view of the daily

⁸² Güterbock 1997.

⁸³ Riemschneider 1970; 2004.

⁸⁴ van den Hout 2003c, 89.

⁸⁵ Güterbock 1942; Alp 1991.

⁸⁶ For the lists and inventories, see del Monte 1995; for the oracle, see van den Hout 2001, 425-26.

life of Hittite officials in the province. The same is true for the 13th-century administrative texts from the site of Kuşaklı: they are mostly oracle reports and cult inventories. These 13th-century documents likewise bear witness to the grip the central administration exerted on local affairs. Two older, Middle Hittite letters were also found there.⁸⁷ The corpus from Ortaköy likewise seems to consist mostly of letters and other administrative texts.⁸⁸

THE HIEROGLYPHIC SOURCES

Among the hieroglyphic sources we need to distinguish two groups: inscriptions and seals, the latter mostly preserved in the form of seal impressions. With about 80 texts the group of hieroglyphic inscriptions from the period of the Hittite empire is still modest compared with over 150 dating to the 1st millennium.⁸⁹ They are either building inscriptions, mostly dedicatory in nature, or short epigraphs accompanying iconic representations of deities, kings, queens and princes. Prime examples of the building inscriptions are the Südburg monument of Šuppiluliuma II (Fig. 6.2), possibly intended as an artificial entrance to the Netherworld,⁹⁰ the Nişantaş inscriptions of the funerary temple for Tuḫaliya IV (see above), the waterworks of Yalburt⁹¹ and the Emirgazi altars (Fig. 6.1),⁹² all from the same king. Unique is the collection of short epigraphs in the Yazılıkaya rock sanctuary in the immediate vicinity of Ḫattuša serving as captions to mostly divine images lined up along the walls of the monument and representing the pantheon of the late Hittite empire.⁹³ This complex too in the form it has come down to us dates to Tuḫaliya IV. The self-representations of royalty found spread all over Anatolia may often have served as boundary markers. Many of these inscriptions have been inscribed on rock surfaces, some taking the form of stelae, others taking the form of reliefs as part of an architectural structure. All stem from the 13th century, with each king from Muwatalli II up to the last known, Šuppiluliuma II, represented, except for Urḫiteššub/Muršili III and Arnuwanda III.⁹⁴

⁸⁷ Wilhelm 1998.

⁸⁸ Stiel 1999, 117; for one letter from the regular excavations, see Süel 1992, 491; for five letter fragments from surface finds, see Ünal 1998, 17-45.

⁸⁹ For a listing, see Marazzi 1986, 89-120; for the Boğazköy texts, see Hawkins 1995, 121; for editions of most, see Meriggi 1975, 259-331; Hawkins 1995.

⁹⁰ Hawkins 1995.

⁹¹ Poetto 1993; Hawkins 1995, 66-85; Karasu, Poetto and Savaş 2000.

⁹² Hawkins 1995, 86-102.

⁹³ Bittel *et al.* 1975.

⁹⁴ Cf. in chronological order the inscriptions from Aleppo I and Sirkeli (Muwatalli II), Fraktin (Ḫattušili III and Puduḫepa), Boğazköy, Emirgazi I (A-D)-V, Karakuyu, Yalburt, Yazılıkaya (Tuḫaliya IV), Nişantaş and the Südburg (Šuppiluliuma II).

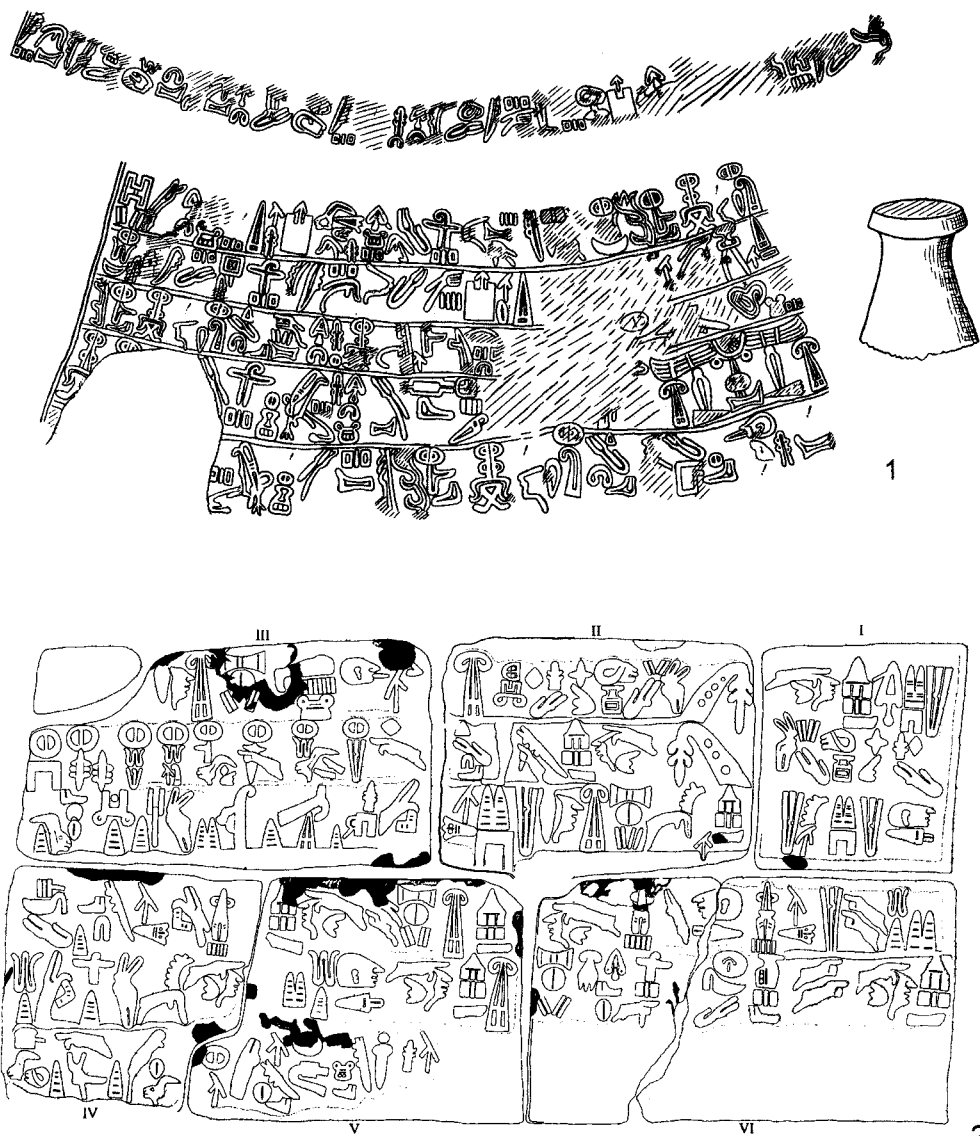


Fig. 6. Inscription in Luwian hieroglyphs:

(1) On the 'altar' from Emirgazi (after L. Messerschmidt, *Corpus inscriptionum Hettiticarum* Zweiter Nachtrag [Mitteilungen der Vorderasiatisch-Ägyptischen Gesellschaft 11.5] [Berlin 1906], Taf. L);

(2) The so-called Südburg inscription from the Hittite capital Ḫattuša (after Hawkins 1995, Abb. 35).

Geographically, the inscriptions range from the far west on the coast of the Aegean (Karabel, Sipylos) through Central Anatolia (Boğazköy) to the south (Karadağ, Kizildağ) and south-east (Ḫalab/Aleppo). North of the area of Boğazköy none has been found so far, however (Fig. 5).⁹⁵

Graffiti or inscriptions on objects like cups (compare the Stag 'rhyton' of the Schimmel collection⁹⁶ or the Boston Fist⁹⁷), bowls⁹⁸ and weapons⁹⁹ are far fewer in number and often difficult to date. If correctly dated, one of the oldest inscriptions of this type on a silver bowl would go back to Tuḫaliya I of the late 15th century BC.¹⁰⁰ Unfortunately, the provenance or exact archaeological context of these objects is rarely known.

To this corpus of inscriptions and graffiti some 5000 published seals and seal impressions can be added (Fig. 7).¹⁰¹ The situation is thus the reverse of the inscriptional material: whereas we have relatively few Bronze Age inscriptions and many from the Iron Age, the number of Bronze Age seal material is very large with only a handful from the Iron Age. The overwhelming majority of seals and impressions come from Boğazköy, about 700 come from elsewhere or are of unknown provenance. Among find-spots of the latter all major Hittite centres are attested: Alaca Höyük, Maşat Höyük, Kuşaklı, Emar, Karkamiš and Ugarit. But seals and seal impressions have been found also as far west as Troy,¹⁰² in Tarsus on the southern coast and as far east as Korucutepe. Seals were a legal instrument functioning as a self-contained system without the need for accompanying written documents and attesting to the correctness or validity of objects sealed.¹⁰³ Such objects could be written documents where the seal owner vouched for the correctness of the contents of the document. They could also be goods for which the seal owner guaranteed the quality or quantity. The earliest known seal using hieroglyphic signs is that of Išputaḫšu, king of Kizzuwatna around 1500 BC, who is known to have concluded a treaty with the Hittite king Telepinu. Older seals and seal impressions are known – mostly from the *Landschenkungsurkunden* – but they use a combination of cuneiform and some symbols that continued to be used within or alongside the hieroglyphic writing system but which had an

⁹⁵ For a map, see Hawkins 2003, 142-43.

⁹⁶ Mucarella 1974, no. 123.

⁹⁷ Güterbock and Kendall 1995.

⁹⁸ Emre and Çınaroğlu 1993; Hawkins 1997.

⁹⁹ Dinçol 1989.

¹⁰⁰ So Hawkins 1997.

¹⁰¹ For a full bibliographic overview of seals and seal impressions up to 1995, see Souček and Siegelová 1996, 316-38.

¹⁰² Hawkins and Easton 1996.

¹⁰³ It is interesting to note that, for instance, scribes never used their seal to 'sign' a tablet they had written (see below on colophons), even though many seals of scribes are attested. This goes to show that a sealing was in the first place a legal action not one of mere identification.

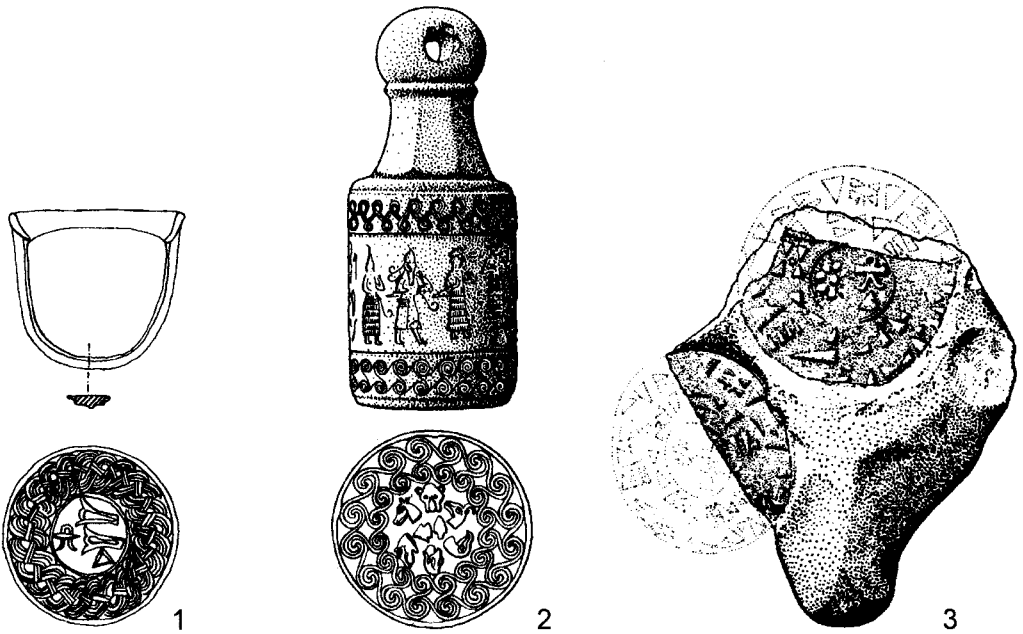


Fig. 7. Seals and seal impressions:

- (1) Gold seal from Alaca Höyük (after R.M. Boehmer and H.G. Güterbock, *Glyptik aus dem Stadtgebiet von Bogazköy* [Berlin 1987], Abb. 34);
- (2) The so-called 'Tyskiewicz Seal' (after H. Müller-Karpe, *Handbuch der Vorgeschichte*, vol. 4, pt 3 [Munich 1980], Taf. 173.15);
- (3) Tonbulla with several seal impressions from Kuşaklı-Sarissa (after A. Müller-Karpe, 'Untersuchungen in Kuşaklı 1997'. *MDOG* 130 [1998], 103, Abb. 7).

exclusively symbolic value that was not part of that system proper. In connection with the *Landschenkungsurkunden*, it has already been mentioned briefly how most impressions were found on bullae in a closed archaeological context the reason for which still defies explanation.

RECORD MANAGEMENT

When around 1324 the Great King Šuppiluliuma I (*ca.* 1360-*ca.* 1320 BC) festively announced that he would marry one of his sons to the Egyptian queen he ordered a century-old tablet from the storerooms and had it read out loud in front of the Egyptian envoys.¹⁰⁴ Although the story does not say how long it

¹⁰⁴ Güterbock 1956, 98.

took to find the document it is clear that it was possible. Another story tells of a certain Walmu, king of Wiluša, who had been expelled from his country, sought refuge with a neighbouring king and appealed to the Hittite Great King. The latter thereupon sent his representative with a copy of the formal document with which Walmu was originally invested and with which he could prove his right to the throne in Wiluša.¹⁰⁵ The document in question was kept in the archives in Ḫattuša and was produced when needed. These are two of many hints at some form of record management and it stands to reason that an empire of such size and stature as the Hittite could not have done without it.

The multifaceted tablet collections of the Hittite capital Ḫattuša offer a rare opportunity to reconstruct the workings of an imperial administration in the later 2nd millennium in which all the above genres had their own place and function. A collection like that of Maşat Höyük is small and limited in content; the one of Kuşaklı is small as well but more varied. The number of texts from Ortaköy is allegedly much larger but practically nothing has been published yet. The following remarks will therefore concentrate on Ḫattuša.

When trying to gauge the number of written documents Hittite scribes and administrators in the capital dealt with, we have only the preserved ones to rely on. Of course, the abovementioned number of approximately 30,000 tablets and fragments does not represent the total number of records that circulated in the capital when it was abandoned. On the one hand, that number must have been considerably lower. What we have are mostly fragments and if we estimate 10 to 12 fragments to a tablet, we arrive at some 3000 complete tablets.¹⁰⁶ Also, not all documents found were 'active' when the capital lost its status. Some fragments were found used as building material, sometimes already dumped in the Hittite period. On the other hand, this number of 3000 may well have been higher considering that many tablets or parts of tablets have been irretrievably lost and the ruling class undoubtedly took with them the most important documents with them upon leaving the city. That there were many more texts than we have at our disposal now, is clear when one looks at the so-called shelf lists mentioning many compositions that we do not seem to have (Fig. 8). Moreover, we have to add the wooden writing boards and metal tablets as well as innumerable notes on smaller formats that were continuously recycled. So, although it is very hard to give a realistic estimate of how many tablets were present and active at any given time in the history of the capital, the number of documents the keepers of the collections dealt with must have run into the thousands and 5000-6000 does not seem unrealistic. Add the thousands of seal impressions and we have a highly complex bureaucratic system.

¹⁰⁵ KUB 19.55 + KUB 48.90 rev. 39-44; see Hoffner 1982.

¹⁰⁶ For this ratio, see Kořak 1995, 174.

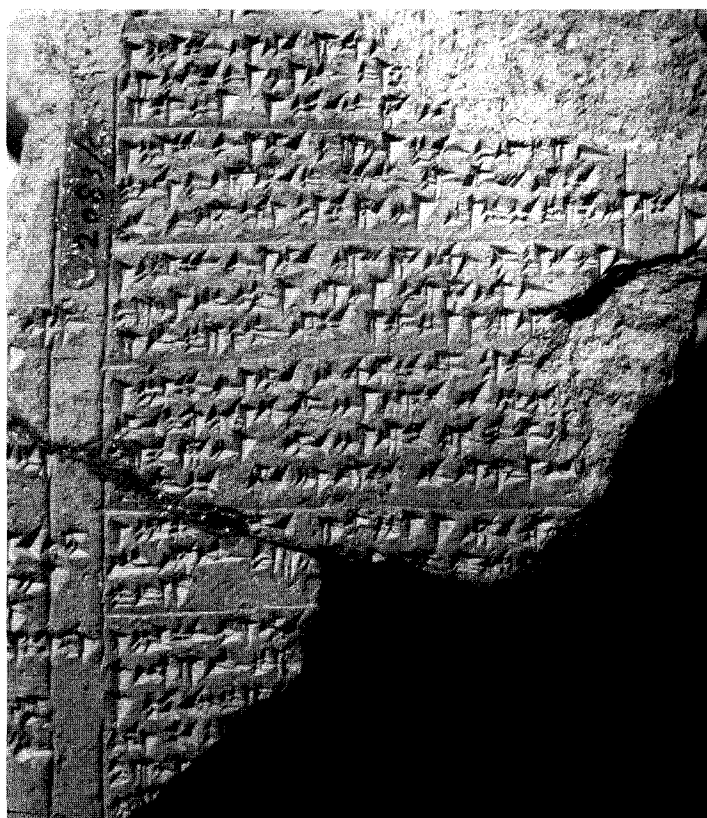


Fig. 8. Fragment of a clay tablet from Boğazköy-Hattuša containing a 'shelf list'. KUB 30.50 V (Oriental Institute, Chicago; photograph H.A. Hoffner).

Apart from passages such as the ones referred to above telling the stories of Šuppiluliuma and Walmu, we have other, concrete evidence for record management systems. First of all, there are the scribal manifestations of record management in the form of colophons and similar tablet-keeping devices. Secondly, archaeology provides us with various kinds of invaluable information.

Record Management: the Texts

To start with the texts, many tablets – although by no means all – have colophons at the end. Typically, they contain the name of the composition, whether it is finished or not, and, if part of a longer series, the number of the present tablet in that series and the scribe's name:

Tablet no. eight of the third day; finished. 'When the king celebrates the Monthly Festival'. Hand of Tarhuntazidi, son of Pidda, written under the supervision of Anuwanza.¹⁰⁷

The name of the scribe suggests a form of scribal accountability and the information on series implies an ordering of tablets on a shelf. It has been surmised that tablets may have been shelved lying on their right side with the top of the obverse facing forward so that the colophon could be easily consulted: remember that normally the reverse would be curved, thus leaving some space between it and the obverse of the tablet put right next to it.¹⁰⁸ In addition to this there existed small labels (Fig. 1.3 above) with just the title of a composition like 'Tablets of Muršili's deeds'.¹⁰⁹ Such labels may have lain in front of a stack of tablets or – some have holes in them¹¹⁰ – may have been hung on the shelf in question or fastened to, for instance, a basket or a wooden chest.¹¹¹ The outline tablets of festivals and rituals mentioned earlier may have had the same function but provided more detail at the same time. Thus, when entering a tablet room in search of a specific tablet, the keeper could identify the place within the room by consulting the labels and track down the exact tablet and later re-shelve it correctly following the numbering in the colophons.

The role of the shelf lists within this system is not quite clear. Shelf lists are the name given to tablets listing compositions by their title, that is, usually their incipit or a variation thereof, the number of tablets making up the composition and whether or not it is complete. If interpreted as a catalogue or inventory of tablets as they stood on the shelf as has been assumed generally, one is often struck by the seemingly random order. One may, for instance, find a political treaty right next to a series of cultic compositions that do not show a high degree of coherence either, as in the following example:

Two tablets: 'When the king, queen and princes give substitutes to the Sun Goddess of the Earth'; finished. We did not find its first tablet.

One tablet: text of Annana, woman from Zigazhur. 'When I invoke the deity Miyatanzipa.' Finished.

One one-column tablet: 'When a singer brings a libation in the temple of the deity Inar, breaks thick breads and prays in Hattian'. Finished.

One tablet of the Zinduḫi women, how they speak in the presence of the king in the temple of the Sun God; finished.

One one-column tablet: songs of the men of Istanuwa; finished.

One tablet of a treaty: When Ispudaḫšu, king of Kizzuwatna and Telepinu, king of Ḫatti concluded a treaty. Finished.¹¹²

¹⁰⁷ KUB 2.13 VI 32-37.

¹⁰⁸ Weitemeier 1955-56, 227, elaborating on Bittel and Naumann 1952, 55-56.

¹⁰⁹ KUB 30.75.

¹¹⁰ KUB 30.71; KBo 31.32.

¹¹¹ For the latter, see Bittel and Naumann 1952, 55.

¹¹² KUB 30.42 + KBo 31.8 IV 9-24; Laroche 1971, 163-64 (with different line numbers 3-18). For a new edition of these texts, see now Dardano 2006 (for this text pp. 26-29).

Such inventories could, however, have had other functions. They could be lists of tablets selected for special purposes not necessarily implying that they all stood next to one another on the same shelf.

Record Management: Archaeology

Within Ḫattuša we can identify several distinct locations that housed tablet collections (Fig. 9). The main collection on the Büyükkale acropolis was Building A where close to 5000 fragments were found, reduced mainly through joins to some 2500 ‘entries’.¹¹³ Smaller collections were kept in Buildings D, E and K. In the Lower City the storerooms in the immediate vicinity of the Great Temple (‘Temple 1’) and the so-called *Haus am Hang* (House on the Slope) were the centres of scribal activity. Temple 1 itself may, moreover, have housed many of the metal tablets solemnly deposited before the deity (see above). Similarly, small collections of tablets have been found in some of the temples of the Upper City as well as in the building known as the Westbau. Archaeologically, the small stone bases found at regular intervals in the rooms of Buildings A and K on Büyükkale have been interpreted as supports for freestanding shelves but the spread of fragments in Building A strongly suggests they were stored on an upper level in that structure.¹¹⁴ There is no evidence for clay chests or jars as tablet containers but baskets or wooden boxes leaving no archaeological trace might have been used to stack tablets.

Theoretically, one may assume that find-spots will reveal the outlines of an administrative system where in terms of an ‘office’ each place of tablet storage had its own functions and responsibilities. Unfortunately, however, the find-spots of about a third of the fragments found in Ḫattuša are unknown, and where we know them it is often difficult to assess whether the tablets were found *in situ* or not. Building D on the acropolis, for instance, has a very clear assemblage of *Landschenkungsurkunden* and bullae in Room 1,¹¹⁵ but the status of several hundred fragments found strewn across the rest of the building remains highly uncertain and is better left out of the discussion. Building E is fraught with similar problems.¹¹⁶ More certainty can be attained concerning Building A on Büyükkale and the storerooms and the *Haus am Hang* in the Lower City. On the basis of a selection of records dating to the reigns of the last three known kings (Tuthaliya IV, Arnuwanda III and Šuppiluliuma II) found at these locations some preliminary and tentative conclusions can be drawn.¹¹⁷

¹¹³ Košak 1995, 174.

¹¹⁴ Cf. Pedersén 1995, 281.

¹¹⁵ Bittel 1950-51.

¹¹⁶ Alaura 1998.

¹¹⁷ On the issues discussed in this paragraph and the method followed, see van den Hout 2006a. Records that can be dated with certainty to Arnuwanda III are unknown but it cannot be excluded that among the largely anonymous administrative documents some were drawn up in his reign.

Economic administration including lists and rosters (see above) is completely absent from the *Haus am Hang* while the number of such texts from Building A is negligible. The storerooms near Temple 1, on the other hand, offer almost all such records. From the viewpoint of efficiency this is understandable: there must have been a daily coming and going of caravans with goods to be delivered and also received again in the context of redistribution of materials. The economic records that have come down to us attest to the various stages of this economic process.¹¹⁸ With only one passageway up to the acropolis accessible to wheeled vehicles,¹¹⁹ the assumption that administration took place in or near one of the buildings there seems very difficult logistically and therefore unlikely. However, the storerooms of the Lower City with their large pithoi for storing goods still in place and with their position in the direct vicinity of two city gates seem very well equipped and ideally located to receive, check and register all incoming and outgoing traffic.

Religious administration, that is inventories of temples and cult throughout the empire,¹²⁰ which was essential in the centralising efforts by the capital, is concentrated in the storerooms and the *Haus am Hang*. Looking at the percentage of these documents per building the *Haus am Hang* clearly ranks first. Again, the percentage of these documents in Building A compared with the numbers from the storerooms and the *Haus am Hang* is such that it is not plausible to assume a main administrative activity of that kind there. One might also classify the oracle reports and vows as religious administration. The former contain the outcome of investigations into the will of the gods and record the promises made by the elite to right a past situation that had caused divine dismay. The latter also record promises but this time exclusively with the future in mind: a deity would be promised something in hope of a specific future divine favour such as a victory in battle or a long life. The overwhelming majority of these oracle reports and vows stems again from the storerooms near the Temple in the Lower City. This means that the brunt of the administration was carried by the storerooms of the Lower City, with the cult inventories, however, concentrated in the *Haus am Hang* but overlapping with the storerooms.

An interesting additional observation with regard to the division of tasks between these two locations is that royal proclamations and edicts dated to Tuthaliya IV are largely concentrated in the storerooms near Temple 1 whereas the same documents of Šuppiluliuma II were found in the *Haus am Hang*. This could point to the *Haus am Hang* as being responsible for the most current political and diplomatic administration with the less current records being moved to the storerooms.

¹¹⁸ Siegelová 1986.

¹¹⁹ See Bittel 1983, 104-05.

¹²⁰ Hazenbos 2003.

The non-Anatolian myths, the translated and adapted Sumero-Akkadian and Hurrian compositions as well as the lexical texts, of which we know the find-spot, were almost exclusively found in the storerooms of the Lower City and some pieces (including the entire Hurrian-Hittite bilingual) in Temples 15-16 and the *Haus am Hang*.¹²¹ The non-translated Sumero-Akkadian literature, on the other hand, stems mostly from Büyükkale, predominantly from Building A; only rarely was a piece found in the Lower City. The horse training texts were kept in Building A only.

Continuing with Building A, it has been pointed out that despite the presence of records from all periods the very late ductus typical for Tuṭḫaliya IV and his successors is not very well represented there.¹²² On the other hand, the number of texts kept in Building A that were written in the Old Kingdom and in the period up to the mid-14th century, which is the group of texts that as a rule exists in multiple copies, is comparatively high. These observations find further support in the claim that certain records originally kept in Building E on Büyükkale were selected and deposited in Building A whereas most others were discarded.¹²³ The number of those records in Building A that were of temporary relevance and as a rule existed in single copies only is in general very low, with the exception of oracle reports and correspondence, probably the two least ephemeral genres among them: both oracle reports and letters had potential political*importance and could be documents of more than short-term importance. With a possible initial transfer of documents from the *Haus am Hang* to the storerooms in the Lower City that we just saw, we can detect perhaps a further stage of tablet removal when documents were moved to Building A on the acropolis. The alternative to this stage may have been destruction. The observations on the non-translated literature and the hippological texts above confirms the picture of Building A as a depository of texts that the Hittite tablet keepers wanted to preserve but did not consult on a regular basis.

In general we can say that the storerooms in the Lower City covered the widest range of genres. All other locations offered a selection only. The storerooms therefore must have been a very central institution, while the other buildings can be regarded as offices with more restricted or specialised tasks and responsibilities. The storerooms were the primary place for the economic administration, the *Haus am Hang* for parts of the religious administration, with part of the documents being moved to the storerooms. The same may have been true for the political-diplomatic documents. Building A seems to have served mainly as a depository of tablets that were no longer of daily relevance

¹²¹ Cf. Archi 1995, 2374.

¹²² Košak 1995, 179.

¹²³ See Alaura 2001, 26.

but were considered important enough to keep. These observations have consequences for the notions of palace and temple as sometimes mentioned in studies of Hittite administration.¹²⁴ The breadth of tasks covered by the storerooms show that the activities at this location were not exclusively linked to the adjacent Temple 1. Although the Temple may have had its own competencies and responsibilities this cannot be argued on the basis of records found in the storerooms. Neither should we think of the palatial institutions (É.GAL or É.LUGAL) referred to in economic contexts as locations exclusively located on Büyükkale.

THE CHARACTER OF THE HITTITE TABLET COLLECTIONS

Normally, we tend to think of archival material in terms of economic administration and bookkeeping in general. Libraries are often associated with literary works. However, in characterising collections of documents as ‘archive’ and ‘library’ we should look at the principles that lie behind the collecting. If the collecting is active, that is, based on a careful selection of what one wants and does not want, we speak of a library. An archive, on the other hand, is passive and grows organically: it is ‘the whole of the written documents, drawings ..., officially received or produced by an administrative body or one of its officials, in so far as these documents were intended to remain in the custody of that body or of that official’.¹²⁵ Content, therefore, does not matter in calling a collection of documents an archive or a library. It is the guiding principle of a collection that determines the correct choice of term.

For the Hittite administration the maintenance of the cultic calendar, consisting in part of the updating and revision of festival scenarios including the Anatolian myths, the composition and compilation of prayers and rituals, or the recording of vows or oracle investigations, were as much state business as the administration of taxes, the drafting of a new treaty or of a letter to a local official or the Pharaoh in Egypt. State business required that all documents received or produced in that context were automatically kept and stored as long as deemed relevant. Many documents were recycled or used as landfill, others were stored indefinitely for future use. The latter group can be described as *retroacta*, that is, older documents relating to a same matter and kept for more

¹²⁴ In general, see Klengel 1975; Archi 1989-90.

¹²⁵ Muller, Feith and Fruin 1968, 13. After ‘written documents, drawings’ the authors included in their definition ‘and printed matter’. Obviously, this is not applicable here, but for the relevance of drawings see above. For a discussion of this definition and the further distinction between ‘living’ and ‘historical’ archives, see van den Hout 2005. ‘Archives’ is used here in the sense of ‘living’ (sometimes also ‘working’) archives unless explicitly stated otherwise.

than the average time of other texts specifically because one already foresaw that they might prove useful at a later stage.

With these definitions and the purposes of the Hittite administration in mind, we can label the majority of the Hittite document collections as archives. However, while most religious texts can fall under this heading, for historical prose like Muršili II's Annals and for texts of foreign origin, that is the omen compendia, the lexical lists as well as the translated or adapted and non-translated fictional writings like myths, epics and wisdom literature, this is perhaps less obvious. Some of these compositions, however, could have been kept as an archival library: an archival library contains documents that are not part of the task of the administrative unit *per se* but that were necessary for it properly to fulfil its task. The collecting and adaptation of certain omen compendia of Mesopotamian origin may well be described as part of an archival library insofar as the celestial omens were consulted and quoted in some oracle inquiries. Likewise annalistic texts may prove very useful in drawing up the historical preamble to a new treaty.

To what extent this is true for non-Anatolian mythology, epic poetry, hymns or legends, whether in the original language, translated or adapted, is difficult to say. Even if one assigns such compositions a place in the curriculum of Hittite scribes this does not fall under the heading of an archive or archival library anymore. It is here that we should speak of a library.

CONCLUSIONS

Almost a century after the decipherment of Hittite the discipline of Hittitology has come a long way. On the basis of the thousands of published texts we have a firm grasp of grammar and a basic knowledge of history and socio-cultural issues, but a lot of work still needs to be done. One of these tasks is to move beyond the individual texts and to study the Hittite written legacy as a whole to answer questions about audience, the function and organisation of written documents in Hittite society as well as the role of (Hieroglyphic) Luwian *vis-à-vis* the Hittite language. The broad variety of genres produced and gathered by a single administration in one place and time as presented by the tablet collections of the Hittite capital offers a unique opportunity to study the inner workings of one of the 2nd millennium's major powers. In spite of its fragmentary preservation the build-up of this legacy reveals which texts were considered important to hold on to and to hand down to future generations, which ones were of more short-lived relevance, and the distribution of documents over several places of tablet storage allows glimpses in administrative procedures and logistics. Here too much remains to be done: many questions about the

physical properties of documents, their formats and handling remain unanswered, a huge task lies ahead in sorting out find-spots and their interpretation in terms of 'offices' and their competencies and responsibilities. What was the idea behind the acquisition of Sumerian and Akkadian literary and scholarly texts? How widespread was the custom of reading texts out loud? Not touched upon here but equally important are questions of (active and passive) literacy, canon, scribal training and the role of scribes in the administration of the empire. In time and with more texts being found and published, discussing and answering such questions will greatly enhance our understanding of Hittite civilisation.

BIBLIOGRAPHY

- Alaura, S. 1998: 'Die Identifizierung der im "Gebäude E" von Büyükkale-Boğazköy gefundenen Tontafelfragmente aus der Grabung von 1933'. *AoF* 25, 193-214.
- 2001: 'Archive und Bibliotheken in Hattuša'. In Wilhelm, G. (ed.), *Akten des IV. Internationalen Kongresses für Hethitologie. Würzburg, 4.-8. Oktober 1999* (*StBoT* 45) (Wiesbaden), 12-26.
- Alp, S. 1991: *Hethitische Briefe aus Maşat-Höyük (TTKY VI.35)* (Ankara).
- Archi, A. 1989-90: 'Funzione economica del tempio ittita'. *Scienze dell'antichità* 3-4, 119-25.
- 1995: 'Hittite and Hurrian Literatures: An Overview'. In Sasson, J. (ed.), *Civilizations of the Ancient Near East* (New York), 2367-77.
- Beckman, G. 1983: 'Mesopotamians and Mesopotamian Learning at Hattuša'. *JCS* 35, 97-114.
- 2000: 'The Hittite Gilgamesh'. In Foster, B.R. (ed.), *The Epic of Gilgamesh* (New York/London), 157-65.
- 2001: 'Sargon and Naram-Sin in Hatti: Reflections of Mesopotamian Antiquity among the Hittites'. In Kuhn, D. and Stahl, H. (eds.), *Die Gegenwart des Altertums. Formen und Funktionen des Altertumsbezugs in den Hochkulturen der Alten Welt* (Heidelberg), 85-91.
- Bittel, K. 1950-51: 'Bemerkungen zu dem auf Büyükkale (Boğazköy) entdeckten hethitischen Siegeldepot'. *JKF* 1, 164-73.
- 1983: *Hattuscha. Hauptstadt der Hethiter. Geschichte und Kultur einer altorientalischen Großmacht* (Cologne).
- Bittel, K., Boessneck, J., Damm, B., Güterbock, H.G., Hauptmann, H., Naumann, R. and Schirmer, W. 1975: *Das hethitische Felsheiligtum Yazılıkaya (Boğazköy-Hattuša IX)* (Berlin).
- Bittel, K. and Naumann, R. 1952: *Boğazköy-Hattuša. Ergebnisse der Ausgrabungen des Deutschen Archäologischen Instituts und der Deutschen Orient-Gesellschaft in den Jahren 1931-1939* (Stuttgart).
- Boehmer, R.M. 1972: *Die Kleinfunde von Boğazköy aus den Grabungskampagnen 1931-1939 und 1952-1969* (Boğazköy-Hattuša VII = WVD OG 87) (Berlin).
- 1979: *Die Kleinfunde aus der Unterstadt von Boğazköy* (Boğazköy-Hattuša X) (Berlin).
- Cancik, H. 1976: *Grundzüge der hethitischen und alttestamentlichen Geschichtsschreibung* (Wiesbaden).

- Carruba, O. 1970: *Das Palaische. Texte, Grammatik, Lexikon* (Wiesbaden).
- 1972: *Beiträge zum Palaischen* (Leiden).
- 1988: 'Die Hajasa-Verträge Hattis'. In Neu, E. and Rüster, C. (eds.), *Documentum Asiae Minoris Antiquae. Festschrift für Heinrich Otten zum 75. Geburtstag* (Wiesbaden), 59-75.
- 2003: *Anittae Res Gestae* (Pavia).
- Corti, C. 2003: 'Perché a Ḫattuša si recitava in 'lingua' sconosciuta?'. *NABU* 2003, 114-16.
- Dardano, P. 2006: *Die hethitischen Tontafelkataloge aus Ḫattuša (CTH 276-282)* (Wiesbaden).
- de Roos, J. 1984: *Hettitische Geloften: Een teksteditie van Hettitische geloften met inleiding, vertaling en critische noten* (Amsterdam).
- del Monte, G. 1995: 'I testi amministrativi da Mašat Höyük/Tapika'. *OrAntM* 2, 89-138.
- Die Hethiter und ihr Reich 2002: *Die Hethiter und ihr Reich. Das Volk der 1000 Götter* (Bonn).
- Diñçol, A. 1989: 'Mizrakucu üzerindeki hiyeroglif yazıt/The Hieroglyphic signs on the spearhead'. In Anlağan, Ç. and ğnder, B. (eds.), *Protohistorik çağ silahları* (Istanbul), 103-04.
- Edel, E. 1994: *Die ägyptisch-hethitische Korrespondenz aus Boghazköi in babylonischer und hethitischer Sprache* (Opladen).
- Emre, K. and Çınaroğlu, A. 1993: 'A Group of Metal Hittite Vessels from Kınık – Kastamonu'. In Mellink, M., Porada, E. and Özgüç, T. (eds.), *Aspects of Art and Iconography: Anatolia and its Neighbors. Studies in Honor of Nimet Özgüç* (Ankara), 675-713.
- Ertekin, A. and Ediz, I. 1993: 'The Unique Sword from Boğazköy/Ḫattuša'. In Mellink, M., Porada, E. and Özgüç, T. (eds.), *Aspects of Art and Iconography: Anatolia and its Neighbors. Studies in Honor of Nimet Özgüç* (Ankara), 719-25.
- Gilan, A. 2005: 'Die hethitischen 'Mannestaten' und ihre Adressaten'. In Süel, A. (ed.), *V. Uluslararası Hititoloji Kongresi Bildirileri, Çorum, 02-08 Eylül 2002/ Acts of the Vth International Congress of Hittitology, Çorum, 2-8 September 2002* (Ankara), 359-69.
- Gurney, O.R. 1940: 'Hittite Prayers of Mursili II'. *AAA* 27, 3-163.
- Güterbock, H.G. 1935: 'Die Texte aus der Grabung 1934 in Boğazköy'. *MDOG* 73, 29-39.
- 1942: 'Zile yakınında Mašat'tan gelme bir eti mektubu/Ein hethitischer Brief aus Mašat bei Zile'. *ADTCFD* 2, 389-97 (Turkish), 399-405 (German).
- 1956: 'The Deeds of Suppiluliuma as Told by His Son, Muṣili II'. *JCS* 10, 41-68, 75-99, 107-130.
- 1957: 'Toward a Definition of the Term Hittite', *Oriens* 10, 233-29.
- 1964: 'A View of Hittite Literature'. *JAOS* 84, 107-15.
- 1967: 'The Hittite Conquest of Cyprus reconsidered'. *JNES* 26, 73-81.
- 1978: 'Hethitische Literatur'. In Röllig, W. (ed.), *Neues Handbuch der Literaturwissenschaft, Band I. Altorientalische Literaturen* (Wiesbaden), 211-53.
- 1986: 'A Religious Text from Mašat'. *JKF* 10, 205-14.
- 1997: 'Erinnerungen an das alte Boğazköy-Archiv und die Landschenkungsurkunde VAT 7436'. *AoF* 24, 25-30.
- Güterbock, H.G. and Kendall, T. 1995: 'A Hittite Silver Vessel in the Form of a Fist'. In Carter, J.B. and Morris, S.P. (eds.), *The Ages of Homer. A Tribute to Emily Townsend Vermeule* (Austin, TX), 45-60.

- Haas, V. 2000: Review of H. Otten and C. Rüster, *Keilschrifttexte aus Boghazköi* XLI (Berlin 1999). *OLZ* 95, 40-42.
- Haas, V. and Wegner, I. 1996: 'Die Orakelprotokolle aus Kuşaklı – Ein Überblick'. *MDOG* 128, 105-20.
- Hagenbuchner, A. 1989a: *Die Korrespondenz der Hethiter 1. Teil. Die Briefe unter ihren kulturellen, sprachlichen und thematischen Gesichtspunkten* (THeth 15) (Heidelberg).
- 1989b: *Die Korrespondenz der Hethiter 2. Teil. Die Briefe mit Transkription, Übersetzung und Kommentar* (THeth 15) (Heidelberg).
- Hawkins, J.D. 1986: 'Writing in Anatolia: imported and indigenous systems'. *World Archaeology* 17, 363-76.
- 1995: *The Hieroglyphic Inscription of the Sacred Pool Complex at Hattusa (SÜDBURG)* (StBot Beiheft 3) (Wiesbaden).
- 1997: 'A Hieroglyphic Luwian Inscription on a Silver Bowl in the Museum of Anatolian Civilizations, Ankara'. *Anadolu Medeniyetleri Müzesi* (1996 Yılı), 7-24.
- 2000: *Corpus of Hieroglyphic Luwian Inscriptions. Volume I: Inscriptions of the Iron Age* (Berlin/New York).
- 2003: 'Scripts and Texts'. In Melchert, H.C. (ed.), *The Luwians* (Leiden/Boston), 128-69.
- Hawkins, J.D. and Easton, D.F. 1996: 'A Hieroglyphic Seal from Troia'. *Studia Troica* 6, 111-18.
- Hazenbos, J. 2003: *The Organization of the Anatolian Local Cults During the Thirteenth Century B.C.* (Leiden/Boston).
- Hecker, K. 1992: 'Zur Herkunft der hethitischen Keilschrift'. In Alp, S. (ed.), *Uluslararası 1. Hittitoloji Kongresi Bildirileri (19-21 Temmuz 1990)* (Ankara), 53-63.
- Herbordt, S. 2005: *Prinzen- und Beamtensiegel der hethitischen Großreichszeit auf Tonbulln aus dem Nişantepe-Archiv in Hattusa (Boğazköy-Hattuša XIX)* (Mainz).
- Hoffner, H.A. 1980: 'Histories and Historians of the Ancient Near East: The Hittites'. *Orientalia* 49, 283-332.
- 1982: 'The Milawata Letter Augmented and Reinterpreted'. *Vorträge gehalten auf der 28. Rencontre assyriologique internationale in Wien, 6.-10. Juli 1981* (AfO Beiheft 19) (Horn), 130-37.
- 2002: 'Archive Shelf Lists'. In Hallo, W.W. and Younger, K.L. (eds.), *The Context of Scripture*, vol. 3 (Leiden/Boston/Cologne), 67-69.
- Houwink ten Cate, P.H.J. 1983: 'The History of Warfare According to the Hittite Sources: The Annals of Hattusilis I'. *Anatolica* 10, 91-109.
- 1992: 'The Hittite Storm God: his Role and his Rule According to Hittite Cuneiform Sources'. In Meijer, D.J.W. (ed.), *Natural Phenomena. Their Meaning, Depiction and Description in the Ancient Near East* (Amsterdam), 83-148.
- Karasu, C., Poetto, M. and Savaş, S. 2000: 'New Fragments Pertaining to the Hieroglyphic Luwian Inscription of Yalburt'. *Archivum Anatolicum* 4, 99-112.
- Kassian, A., Korolëv, A. and Sideltsev, A. 2002: *Hittite Funerary Ritual sallis wastais* (Münster).
- Klengel, H. 1973: *Keilschrifturkunden aus Boghazköi XLIV: Hethitische Rituale und Festbeschreibungen* (Berlin).
- 1975: 'Zur ökonomischen Funktion der hethitischen Tempel'. *SMEA* 16, 181-200.
- 1988: 'Papaja, Katahzipuri und der eja-Baum. Erwägungen zum Verständnis von KUB LVI 17'. In Imparati, F. (ed.), *Studi di storia e di filologia anatolica dedicati a Giovanni Pugliese Carratelli* (Florence), 101-10.

- Klinger, J. 1998: "Wer lehrte die Hethiter das Schreiben?" Zur Paläographie früher Texte in akkadischer Sprache aus Boğazköy: Skizze einiger Überlegungen und vorläufiger Ergebnisse'. In Alp, S. and Süel, A. (eds.), *III. Uluslararası Hititoloji Kongresi Bildirileri, Çorum, 16-22 Eylül 1996/Acts of the IIIrd International Congress of Hittitology, Çorum, September 16-22, 1996* (Ankara), 365-75.
- Koşak, S. 1982: *Hittite inventory texts (CTH 241-250)* (Heidelberg).
- 1988: Review of H. Klengel, *Hethitische Gelübde und Traumtexte sowie Rituale und Festbeschreibungen* (= KUB 56, Berlin 1986). *ZAss* 78, 145-49.
- 1995: 'The Palace Library "Building A" on Büyükkale'. In van den Hout, T.P.J. and de Roos, J. (eds.), *Studio Historiae Ardens. Ancient Near Eastern Studies Presented to Philo H.J. Houwink ten Cate on the Occasion of His 65th Birthday* (Leiden), 173-79.
- *Konkordanz der hethitischen Keilschrifttafeln (I-LX)* on the web site *Hethitologie Portal Mainz* at <http://www.hethport.uni-wuerzburg.de/hetkonk>.
- Laroche, E. 1971: *Catalogue des textes hittites* (Paris).
- 1972: 'Catalogue des textes hittites. Premier supplément'. *RHA* 30, 94-133.
- 1975: Review of KUB XLIV, XLV, XLVI and KBo XXII. *RHA* 33, 63-71.
- Marazzi, M. 1986: *L'Anatolia hittita. Repertori archeologici ed epigrafici* (Rome).
- 1994: 'Ma gli hittiti scrivevano veramente su "legno"?'. In Cipriano, P., di Giovine, P. and Mancini, M. (eds.), *Miscellanea di studi linguistici in onore di Walter Belardi* (Rome), 131-60.
- 2000: 'Sigilli e tavolette di legno: le fonti letterarie e le testimonianze sfragistiche nell'Anatolia hittite'. In Perna, M. (ed.), *Administrative Documents in the Aegean and their Near Eastern Counterparts* (Naples), 79-98.
- Melchert, H.C. 1993: *Cuneiform Luvian Lexicon* (Chapel Hill, NC).
- (ed.) 2003: *The Luwians* (Leiden/Boston).
- Meriggi, P. 1962: 'Über einige hethitische Fragmente historischen Inhalts'. *WZKM* 58, 66-110.
- 1975: *Manuale di eteo geroglifico II* (Rome).
- Mora, C. 1991: 'Sull'origine della scrittura geroglifica anatolica'. *Kadmos* 30, 1-28.
- Muller, S., Feith, J.A. and Fruin, R. 1968: *Manual for the Arrangement and Description of Archives Drawn up by direction of the Netherlands Association of Archivists*, translation of the 2nd ed. (New York).
- Müller-Karpe, A. 2000: 'Kayalıpınar in Ostkappadokien. Ein neuer hethitischer Tontafelfundplatz'. *MDOG* 132, 355-65.
- Muscarella, O.W. 1974: *Ancient Art. The Norbert Schimmel Collection* (Mainz).
- Neu, E. 1974: *Der Anitta-Text (StBoT 18)* (Wiesbaden).
- 1996: *Das hurritische Epos der Freilassung I. Untersuchungen zu einem hurritisch-hethitischen Textensemble aus Hattusa (StBoT 32)* (Wiesbaden).
- Neve, P. 1993: *Hattusa: Stadt der Götter und Tempel. Neue Ausgrabungen in der Hauptstadt der Hethiter* (Mainz).
- Otten, H. 1955: 'Bibliotheken im Alten Orient'. *Das Altertum* 1, 67-81.
- 1958: *Hethitische Totenrituale* (Berlin).
- 1988: *Die Bronzetafel aus Bogazköy. Ein Staatsvertrag Tuthalijas IV (StBoT Beiheft 1)* (Wiesbaden).
- Özgüç, T. 1956: 'The Dagger of Anitta'. *Belleten* 20, 29-36.
- Paroussis, M. 1985: *Les listes de champs de Pylos et Hattusa et le régime foncier mycénien et Hittite* (Paris).
- Payton, R. 1991: 'The Ulu Burun Writing-Board Set'. *AnSt* 41, 99-106.

- Pedersén, O. 1995: Review of S. Košak, *Konkordanz der Keilschrifttafeln I* (= *StBot* 34). *OLZ* 90, 278-82.
- Poetto, M. 1993: *L'iscrizione luvio-geroglifica di Yalburt. Nouve acquisizioni relative alla geografia dell'Anatolia sud-occidentale* (Pavia).
- Postgate, J.N. 2003: 'Documents in Government under the Middle Assyrian Kingdom'. In Brosius, M. (ed.), *Ancient Archives and Archival Traditions. Concepts of Record-Keeping in the Ancient World* (Oxford), 124-38.
- Riemschneider, K.K. 1958: 'Die hethitischen Landschenkungsurkunden'. *MIO* 6, 321-81.
- 1970: *Babylonische Geburtsomina in hethitischer Übersetzung* (Wiesbaden).
- 2004: *Die hethitischen und akkadischen Omentexte aus Boğazköy* (Dresden).
- Roszkowska-Mutschler, H. 2002: 'Zu den Mannestaten der hethitischen Könige und ihrem Sitz im Leben'. In Taracha, P. (ed.), *Silva Anatolica. Anatolian Studies Presented to Maciej Popko on the Occasion of his 65th Birthday* (Warsaw), 289-300.
- Rüster, C. 1993: 'Eine Urkunde Ḫantilis II.'. *IstMitt* 43, 63-70.
- Rüster, C. and Neu, E. 1989: *Hethitisches Zeichenlexikon. Inventar und Interpretation der Keilschriftzeichen aus den Boğazköy-Texten* (*StBot* Beiheft 2) (Wiesbaden).
- Salvini, M. 1993: 'Un documento del re ittita Ammuna'. *SMEA* 32, 85-89.
- Seeher, J. 2003: 'The Cuneiform Tablet Archives and Libraries of Hattusha'. In *Ancient Libraries in Anatolia. Libraries of Hattusha, Pergamon, Ephesus, Nysa* (The 24th Annual Conference Libraries and Education in the Networked Information Environment, June 2-5 2003, Ankara, Turkey) (Ankara), 7-17.
- Siegelová, J. 1986: *Hethitische Verwaltungspraxis im Lichte der Wirtschafts- und Inventardokumente* (Prague).
- 1993: s.v. 'Metalle und Metallurgie'. *RLAss* VIII, 112-19.
- Singer, I. 1983: *The Hittite KILAM Festival*, vol. 1 (*StBot* 27) (Wiesbaden).
- 1984: *The Hittite KILAM Festival*, vol. 2 (*StBot* 28) (Wiesbaden).
- 2002: *Hittite Prayers* (Atlanta).
- Souček, V. 1959: 'Die hethitischen Feldertexte'. *ArOr* 27, 5-43, 379-95.
- Souček, V. and Siegelová, J. 1996: *Systematische Bibliographie der Hethitologie 1915-1995*, 3 vols. (Prague).
- Soysal, O. 2004: *Hattischer Wortschatz in hethitischer Textüberlieferung* (Leiden/Boston).
- Starke, F. 1985: *Die keilschrift-luwischen Texte in Umschrift* (Wiesbaden).
- Süel, A. 1992: 'Ortaköy: Eine hethitische Stadt mit hethitischen und huritischen Tontafelentdeckungen'. In Akurgal, E., Ertem, H., Otten, H. and Süel, A. (eds.), *Hittite and Other Anatolian and Near Eastern Studies in Honour of Sedat Alp* (Ankara), 487-92.
- 1999: 'The Hittite Name of Ortaköy in the Hittite Period'. *XII. Türk Tarih Kongresi, Ankara, 13-16 Eylül 1994. Kongreye Sunulan Bildiriler* [1999], 117-28.
- Süel, A. and Soysal, O. 2003: 'A Practical Vocabulary from Ortaköy'. In Beckman, G., Beal, R. and McMahon, G. (eds.), *Hittite Studies in Honor of Harry A. Hoffner Jr. on the Occasion of his 65th Birthday* (Winona Lake, IN), 349-65.
- Symington, D. 1991: 'Late Bronze Age Writing-Boards and their Uses: Textual Evidence from Anatolia and Syria'. *AnSt* 41, 111-23.
- Ünal, A. 1987: Review of H. Freydank, *Hethitische Rituale und Festbeschreibungen* (= KUB 55, Berlin 1985). *BiOr* 44, 474-86.
- 1989: 'Drawings, Graffiti and Squiggles on the Hittite Tablets – Art in Scribal Circles'. In Emre, K., Hrouda, B., Mellink, M. and Özgüç, N. (eds.), *Anatolia and*

- the Ancient Near East. Studies in Honor of Tahsin Özgüç* (Ankara), 505-13 with Pls. 140-141.
- 1993: 'Boğazköy kılıcının üzerindeki akadca adak yazısı hakkında yeni gözlemler'. In Mellink, M., Porada, E. and Özgüç, T. (eds.), *Aspects of Art and Iconography: Anatolia and its Neighbors. Studies in Honor of Nimet Özgüç* (Ankara), 727-30.
- 1998: *Hittite and Hurrian Cuneiform Tablets from Ortaköy (Çorum), Central Turkey* (Istanbul).
- van den Hout, T.P.J. 1989: 'A Chronology of the Tarhuntassa-Treaties'. *JCS* 41, 100-14.
- 1994: 'Death as a Privilege. The Hittite Royal Funerary Ritual'. In Bremer, J.M., van den Hout, T.P.J. and Peters, R. (eds.), *Hidden Futures. Death and Immortality in Ancient Egypt, Anatolia, the Classical, Biblical and Arabic-Islamic World* (Amsterdam), 37-75.
- 1995: *Der Ulmitesub-Vertrag. Eine prosopographische Untersuchung* (Wiesbaden).
- 2001: 'Bemerkungen zu älteren hethitischen Orakeltexten'. In Richter, T., Prechel, D. and Klinger, J. (eds.), *Kulturgeschichten. Altorientalische Studien für Volkert Haas zum 65. Geburtstag* (Saarbrücken), 423-40.
- 2002: 'Another View of Hittite Literature'. In de Martino, S. and Pecchioli Daddi, F. (eds.), *Anatolia Antica. Studi in memoria di Fiorella Imparati* (Florence), 857-78.
- 2003a: Review of J. Puhvel, *Hittite Etymological Dictionary*, vols. 4 and 5 (Berlin 1997 and 2001). *BiOr.* 60, 174-77.
- 2003b: s.v. 'Orakel (Oracle)'. *RLAss* X, 118-24.
- 2003c: s.v. 'Omina (Omens)'. *RLAss* X, 88-90.
- 2005: 'On the Nature of the Tablet Collections of Ḫattuša'. *SMEA* 47, 277-89.
- 2006a: 'Administration in the Reign of Tuthaliya IV and the Later Years of the Hittite Empire'. In van den Hout, T. (ed.), *The Life and Times of Hattusili III and Tuthaliya IV* (Leiden), 77-106.
- 2006b: 'Institutions, Vernaculars, Publics: The Case of Second-Millennium Anatolia'. In Sanders, S. (ed.), *Margins of Writing, Origins of Culture* (Chicago), 217-56.
- Wegner, I. 2000: *Einführung in die hurritische Sprache* (Wiesbaden).
- Weitemeier, M. 1955-56: 'Archive and Library Technique in Ancient Mesopotamia'. *Libri* 6, 217-38.
- Werner, R. 1967: *Hethitische Gerichtsprotokolle* (Wiesbaden).
- Wilhelm, G. 1992: 'Zur babylonisch-assyrischen Schultradition in Ḫattuša'. In Alp, S. (ed.), *Uluslararası 1. birinci Hititoloji Kongresi Bildirileri (19-21 Temmuz 1990)* (Ankara), 83-93.
- 1997: *Kuşaklı-Sarissa. Band 1: Keilschrifttexte, Faszikel 1. Keilschrifttexte aus Gebäude A* (Rahden, Westphalia).
- 1998: 'Zwei mittelhethitische Briefe aus dem Gebäude C in Kuşaklı'. *MDOG* 130, 175-87.
- 2000: 'Ein weiterer Tontafelfund aus dem Gebäude A in Kuşaklı'. *MDOG* 132, 324-28.
- 2001: 'Das hurritisch-hethitische "Lied der Freilassung"'. In Kaiser, O. (ed.), *Texte aus der Umwelt des Alten Testaments, Ergänzungslieferung* (Gütersloh), 82-91.
- 2002: 'Die Keilschriftfunde der Kampagne 2001 in Kuşaklı'. *MDOG* 134, 342-51.
- Yalçıklı, D. 2000: 'Zwei Bronzegabeln aus Zentralanatolien (mit einem Beitrag von Aygül Süel)'. *IstMitt* 50, 113-30.

CHAPTER 4

HITTITE STATE AND SOCIETY

Trevor R. BRYCE

Abstract

The chapter begins with the various roles and responsibilities exercised by the Hittite king. We pass to a discussion of the religious activities of the Hittite world, and the involvement of the highest members of the royal family in these activities. Various aspects of the Hittite legal system and Hittite notions of justice are discussed, as also the importance of the role of the scribe in the kingdom's administrative and diplomatic activities. Effective use of agricultural and pastoral resources was of critical importance to the well being of the kingdom. Attention is given to the management of these resources. More generally, the stability of the kingdom depended on the co-operation of a large number of officials within the Hittite administration, beginning with the king's closest relatives, and extending to provincial governors, and to local vassal rulers who were bound by personal compacts of allegiance to their Hittite overlord.

In former days there was a Great King called Labarna. His country was small. But on whatever campaign he went, he subjugated by his might the lands of the enemy. He kept devastating these lands, stripping them of their power. And he made the sea their boundaries.

Thus in his famous Proclamation¹ the 16th-century king Telipinu recorded the exploits of his first attested predecessor upon the throne of Ḫatti. From the beginning of recorded Hittite history, the land of Ḫatti was ruled by a monarchy. With the earliest known Hittite king, called Labarna in Hittite texts, we associate the establishment of a royal dynasty which exercised varying degrees of power and influence in the Near Eastern world throughout the Late Bronze Age and well into the period of the subsequent Neo-Hittite kingdoms of Syria. Aggressive militarism featured prominently in the careers of the early Hittite kings.² This was partly a matter of ensuring the survival and growth of their kingdom in an environment where many states, petty kingdoms, and tribes vied

¹ CTH 19; most recently edited by Hoffmann 1984.

² See the contribution by Lorenz and Schrakamp about Hittite Military and Warfare in this volume.

with one another for supremacy. Rule or be ruled. There was seldom any middle course.

THE KING AND HIS DUTIES

The need to secure access to valuable commodities and raw materials not obtainable locally was no doubt one of the important incentives for military enterprises abroad, sometimes far from the homeland. But there was an even more powerful, if less tangible incentive for such enterprises. The ideology of kingship required that the man who occupied his kingdom's throne demonstrate to his subjects, allies, and enemies alike his fitness to rule by achieving great successes in the field of battle, matching or even surpassing those of his most illustrious predecessors. The image of the king as a mighty warrior was as important in Hittite royal ideology as it was in the ideologies of all the great monarchies of the Near Eastern world (Fig. 1.1-2).³

Successful military campaigns also ensured the loyalty of the king's leading warriors and the goodwill of his gods through the allocation to them of generous portions of the spoils of battle. The king's land-owning nobility who had fought under His Majesty's command restocked their estates with the rewards of their service in the field – enslaved prisoners-of-war, and cattle and sheep 'beyond count'. But it was for the gods who had ensured the king's triumph

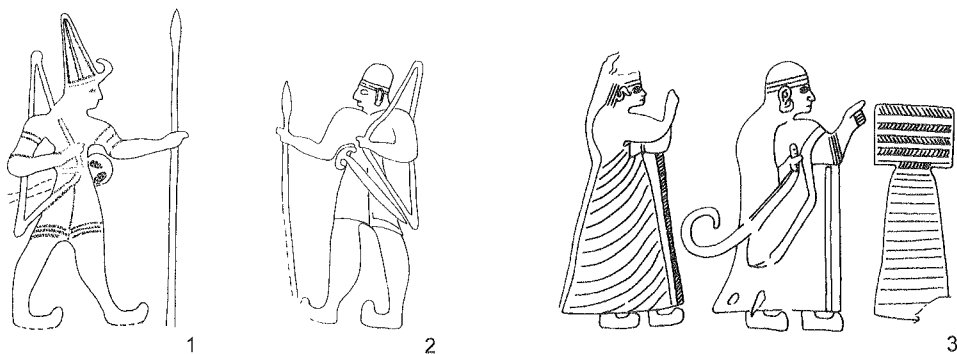


Fig. 1. Depiction of kings as warrior: (1-2) Rock reliefs at Karabel and Hemite (after K. Kohlmeyer, 'Felsbilder der hethitischen Großreichszeit'. *APA* 15, 1983, fig. 2, fig. 39). (3) King and queen during their religious responsibilities, relief stones from the Sphinx Gate at Alaca Höyük (after H. Müller-Karpe, *Handbuch der Vorgeschichte*, vol. 4, pt 3 (Munich 1980), Taf. 176, B3).

³ Further on the ideology of Hittite kingship, see Beckman 1995; Bryce 2005, 83-85.

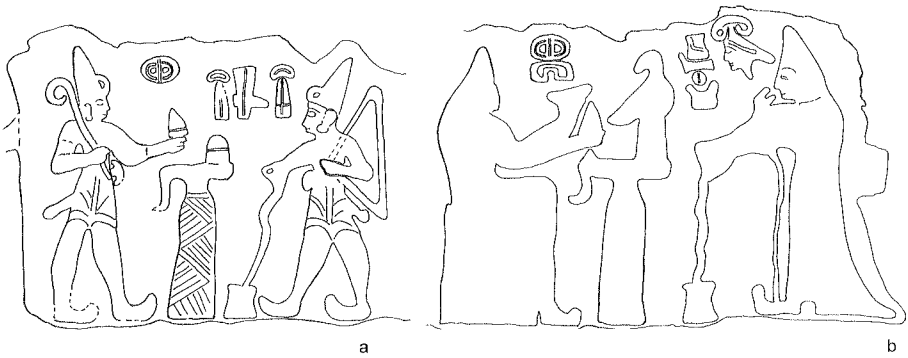


Fig. 2. Rock relief at Fraktın. The Great King Hattušili III and his wife, the Queen Puduḫepa, perform an offering with libation (after K. Kohlmeyer, 'Felsbilder der hethitischen Großreichszeit'. *APA* 15, 1983, figs. 24-25).

over his enemies that a large measure of the richest spoils were reserved – the plunder of a conquered land's temples and palaces.

The king's military responsibilities as commander-in-chief of the Hittite army was complemented by his religious and judicial responsibilities (Figs. 1.3; 2). He held his position by divine appointment from the Storm God, and ruled the Land of Hatti as the god's deputy. Though he had his own personal tutelary deity, he was said to be 'favoured by all the gods', an endorsement which gave him the status of sacrosanctity – at least in theory. Serving as intermediary between the deities of the realm and their mortal worshippers, the king was obliged to perform a wide range of often extremely time-consuming religious duties. Not the least of these was the leading role he played in the kingdom's religious festivals. The official calendar contained at least 165 such festivals, many of which had to be celebrated annually or even more frequently. Some lasted no more than a few hours, others occupied more than a month.⁴ Certainly there were occasions when the king could delegate his duties as chief celebrant in a particular festival to another member of his family. But there were a number of festivals which required his personal participation, including probably the major spring and autumn festivals, and on occasion he may have had to cut short an important military campaign in order to fulfil this responsibility. A king who neglected his religious duties or offended the gods in some other way, for example by violating an oath, could bring down divine wrath upon his whole kingdom. The gods did not hesitate to demonstrate their displeasure, for something done or left undone. Prompt, effective action was essential.

⁴ For a general account of festivals in the Hittite world, see Bryce 2002, 187-99.

No small part of His Majesty's religious responsibilities involved identifying the cause of divine wrath, through prayer or oracular consultation, and determining what must be done to appease the offended deity. The latter had no qualms about inflicting catastrophic punishment upon an entire people for an offence committed by their king.⁵

In a world where there was no clear division between sacred and secular, the highest priestly offices in the land were filled by the most elite members of the Hittite administration, beginning with members of the royal family. Thus Šuppiluliuma I appointed his son Telipinu as high priest in Kizzuwatna, a country in south-eastern Anatolia which contained at least two of the most important religious centres in the Hittite kingdom, Kummanni and Lawazantiya. Of considerable significance was the religious role played by the reigning queen, generally the king's chief consort, whose authority continued into the reign of her husband's successor if her husband predeceased her. Sometimes referred to by the title Tawananna, she was chief priestess of the Hittite realm, a role which gave her substantial authority over the state cults and their assets. King Muršili II informs us that his stepmother, the Babylonian princess who assumed the name Tawananna as a personal name after marrying his father Šuppiluliuma, blatantly abused the authority which her role as *šiwanzanni* priestess conferred upon her.⁶ In the following century Puduḫepa, the chief consort of Muršili's son Ḫattušili III, embarked on a major review of religious practices and traditions throughout the Hittite world. As part of the review, she began rationalising the enormous and ever-expanding Hittite pantheon by establishing syncretisms between some of its chief deities, in particular identifying Hittite gods with their Hurrian counterparts.⁷

As the supreme judicial authority in the land, the king sat in judgment on disputes between his vassal rulers, on a range of other cases referred to his attention from the vassal states, on offences which could only be tried by the king's court (including certain cases involving homicide or illegal sexual conduct), and on appeals against judgments made by a lower court. The incessant stream of criminal offences and litigation that must have passed through the king's court were undoubtedly far more than His Majesty could handle in person. Much of the court's business must have been delegated to other officials, especially members of the king's own family. Already in the early days of her marriage to Ḫattušili, Queen Puduḫepa shared her husband's

⁵ As reflected in the so-called Plague Prayers of King Muršili II, most recently translated, with commentaries, by Singer 2002, 47-69.

⁶ KBo 14.4 (CTH 70), most recently translated by Singer 2002, 73-77.

⁷ KUB 21.27 (CTH 384) I 3-4, translated by Goetze in Pritchard 1969, 393.



Fig. 3. Seal impression of Puduḫepa: (1) Seal of Puduḫepa from Boğazköy; (2) Seal of Puduḫepa and her husband Ḫattušili III from Boğazköy; (3) Seal of Puduḫepa and her son, the Great King Tuthaliya IV from Ugarit (after H. Müller-Karpe, *Frauen des 13. Jahrhunderts v. Chr.* [Mainz 1985], Abb. 29.1, 4; 33).

judicial responsibilities (Figs. 2b; 3). And after his death, she appears to have become increasingly active in the judicial sphere, sometimes intervening in legal disputes, and making pronouncements on cases brought to her attention in the vassal states. She did so in the name of the reigning king and actually used his royal title 'My Sun'.⁸ Many of the disputes arising in the Hittite's Syrian vassal states were dealt with directly by the viceroys stationed in Ḫalab/Aleppo and Karkamiš. But even apparently minor cases arising in the provinces might sometimes attract the direct intervention of the king himself. A case in point is an appeal made to the king by a minor priest in the city of Emar on the Euphrates who complained to His Majesty about an allegedly unjust imposition of taxes upon him by a local official. The king appears to have dealt with the matter in person, deciding in favour of the plaintiff and communicating this in a letter addressed directly to the official concerned.⁹

THE ADMINISTRATION

The letter may well have been composed by the king himself, but was actually written by a scribe. Literacy in the Hittite kingdom as in other parts of the contemporary Near Eastern world was confined to a small professional class. We cannot be sure whether even the kings were able to read and write. The

⁸ As in the case where she intervened in a dispute involving a damaged boat in Ugarit (RS 17.133 [CTH 95] = *PRU* IV, 118-19).

⁹ For a transcription and translation of the letter, together with commentary, see Singer 1999.

scribal class played a crucial role in the palace and temple bureaucracies of the Hittite state. We hear, for example, of no less than fifty-two scribes attached to the service of the temple of the Storm God in Ḫattuša. While the great majority of scribes may not have advanced beyond the journeyman levels of their occupation, spending their working lives as copyists, archivists, or in taking dictation, there were opportunities for the most ambitious and talented in the profession to rise to the very highest levels of the kingdom's administration. Some may well have been included in the king's inner circle of confidants and advisers. A number undoubtedly played an important role in drawing up the treaties and letters of state which the king exchanged with both his vassal rulers and foreign peers. One of the most exalted members of the scribal profession was the man who occupied the post of Chief Scribe during the reign of Muwatalli II. His name was Mittannamuwa. When Muwatalli relocated the royal seat of the kingdom to Tarḫuntašša, Mittannamuwa was appointed chief administrator of the old capital Ḫattuša.¹⁰

In the general administration of his kingdom, the king maintained regular direct contact, through the services of his scribes, with many of the officials whom he appointed to the kingdom's regional centres. One of the most important of these officials was a kind of district governor called the *BĒL MADGALTI* (literally 'lord of the watch-tower'). Generally located in one of the homeland's outlying regions, the *BĒL MADGALTI* was responsible for the security of the frontiers and had charge of the garrisons stationed in the area. He had to ensure that fortresses and towns under his authority were securely locked in the evenings, that there was an adequate supply of timber on hand in case of siege, that all precautions were taken against the outbreak of fire, and that buildings, roads, irrigation canals, and temples within his district were kept fully operational. He was responsible for managing the king's lands and collecting his taxes. He also had judicial functions which entailed travelling around his district to preside at local assizes. And he was obliged to submit regular reports on all these matters to the king himself.¹¹ The recently discovered tablet archive at Tapikka (modern Maşat), containing some 96 letters (out of a total of 116 texts) exchanged between the king and his officials in Tapikka, as well as between these officials and bureaucrats in Ḫattuša, provides valuable information on the administration of one of the homeland's outlying regions, at a time

¹⁰ KBo 4.12 (CTH 87) rev. 17. In general on scribes in the Hittite world, see Bryce 2002, 56-71.

¹¹ Our information on what their appointment entailed comes largely from the so-called *BĒL MADGALTI* text (KUB 13.1, 2 and duplicates [CTH 261]), which sets out in considerable detail the governor's duties and responsibilities. The text has been edited by von Schuler 1957, 36-65. See also Beal 1992, 426-35.

when the Kaška tribes from the Pontic region were posing an ever-increasing threat to the homeland's northern frontiers.¹²

About 60 km west of Tapikka lies the recently excavated city of Šapinuwa (modern Ortaköy), a large and important city once used by the Hittite king as a royal residence. The cache of more than 3000 tablets discovered on the site has yet to be published, and will undoubtedly provide important new information about regional administration in the Hittite kingdom.¹³ Each regional centre served as the core settlement of a number of communities or villages, each of which was governed by a Council of Elders, whose responsibilities seem to have been largely religious and judicial, and who collaborated closely with the local governor.¹⁴ On average, the Council's area of authority probably extended about 5 km from the village centre, and its jurisdiction included all farmsteads and hamlets lying within this range.

LAND OWNERSHIP

Small landholdings might consist typically of a run for a modest number of livestock, including perhaps a few head of cattle and sheep, some pigs and goats, an area under grain cultivation, and perhaps a small orchard. Close by the house itself, a mudbrick, timber-framed structure, the farmer may have kept a small vegetable garden. In a few cases, he may have owned his land outright. In the majority of cases he probably leased it from a wealthy neighbour or from the village community (which owned land communally and earned revenue from it by leasing it out, or by the villagers themselves apportioning a certain amount of their time to working it). He might also have leased from one or the other an additional plot or two to increase his grain crop or diversify his orchard produce.¹⁵

As we know from a number of land-grant documents,¹⁶ the owners of the larger estates had often received their landholding as a gift from the king, as a reward for services rendered either in the administration of the kingdom or in the field of battle. The estates thus bestowed often included gardens, woods, and meadows, and the personnel belonging to them. Amongst the large landholders were the temple establishments, whose assets often included extensive tracts of farm and pasture land. All landholders, large and small, had obligations

¹² The letters have been edited by Alp 1991.

¹³ For a summary of the site and its finds, see Süel 2002.

¹⁴ On the role of the Elders in general, see Klengel 1965.

¹⁵ Information of this nature is supplied by a land-grant document which lists the assets of a farmer called Tiwatapara, KBo 5.7 (CTH 223), discussed by Bryce 2002, 74-75.

¹⁶ On these documents, see Bryce 2005, 413 n. 110 and the references cited therein.

to fulfil. The most important of these was to ensure that the land allocated to or leased by them was used to its maximum capacity. For in a kingdom whose prosperity, wellbeing, and indeed very survival depended to a large extent on the efficiency and industry of its food-producers, no cultivable land could afford to be left unworked. Any landholder who failed to use his land in the most effective way risked forfeiting it.

The large landowners were obliged to ensure that all tax and labour requirements for their estates were fully met, whether from land directly worked by themselves and their own labour force or from land which they had leased to tenant farmers. The village Councils of Elders also had the task of ensuring effective use of the land within their supervision and the payment of taxes due, as well as arbitrating on disputes between landholders and other members of the local community. Minor disputes must have been settled by the Councils themselves, but more serious cases were probably held over until the provincial governor visited the community during one of his tours of inspection, when something like an assize was held. He was directly instructed by the king to ensure that full justice was done to all, without any bias being shown to a wealthy man in dispute with one of humble circumstances. 'Into whatever city you return, summon forth all the people of the city. Whoever has a suit, decide it for him and satisfy him. If the slave of a man, or the maidservant of a man, or a bereaved woman has a suit, decide it for them and satisfy them. Do not make the better case the worse or the worse case the better. Do what is just.'¹⁷ Even then, a litigant dissatisfied with a decision made at the local level might appeal his case to the court of the king.

HITTITE LAWS

Rules for the good conduct of Hittite society are reflected in a collection of Laws, surviving in a number of more or less fragmentary copies and consisting of a total of 200 clauses.¹⁸ The compilers of the Laws drew much of their inspiration and content from the 'law-code' of the 18th-century Babylonian king, Hammurapi. But there were important differences between Hittite and Babylonian law. For example, the Babylonian notion of blood revenge finds no place in Hittite law. The emphasis in the latter is on the principle of compensation. This ensured that the offender's punishment not merely fitted the crime,

¹⁷ Instructions to the *BÊL MADGALTİ*, KUB 13.2 (CTH 261) III 29-35, translated by Gurney 1990, 76.

¹⁸ For the most recent edition of the Laws, see Hoffner 1997.

but was of direct and material benefit to the victim of that crime. In each case the size and nature of the penalty imposed upon the offender was determined by the extent and nature of his victim's losses or injuries. A further determining factor was the status of both the victim and the offender – whether they were slave or free, as discussed below.

The range of offences dealt with in the Laws extend from accidental or unpremeditated homicide, assault, abduction, theft, damage to property, and sorcery, to various categories of forbidden sexual liaisons. In the domain of civil law, there are various provisions relating to marriage. The Laws also contain a list of prices to be paid for particular goods and services, the latter including hire rates for human labour, livestock and equipment. But the Laws are far from comprehensive in the range of offences with which they deal. Items barely touched upon or not covered at all include, in the criminal area, premeditated homicide and rape (only one clause refers to rape), and in the civil area contract and commercial law, and laws relating to family succession and inheritance. Undoubtedly such matters were covered somewhere in the legal system. We must assume that they were either subject to customary law or dealt with in other legal contexts which have left no trace in the written record. In any case, we should think of the Hittite collection of Laws as by and large a manual of legal precedents, recording judgments handed down in the past and intending to serve essentially as a set of guidelines when cases of a similar nature arose in the future. Almost certainly the Laws were of an advisory rather than a prescriptive nature. Further, earlier versions of the Laws were subject to a number of revisions, incorporating forms of punishment which in most cases were milder than in the past, and generally of more practical value to the victim of an offence. Thus physical mutilation of the offender as a punishment was commonly replaced by a monetary penalty (unless the offender was a slave), expressed as a certain number of shekels of silver payable to the victim, together with any additional services which the offender had to provide for his victim.

All subjects of the state, both slave and free, had the right of legal redress for offences committed against their persons or their property – though the law was not even-handed in this respect. Offences committed by or against a slave attracted different penalties from those committed by or against a free person. And the likelihood is that compensation for injury done to a slave was payable to the slave's master rather than to the slave him- or herself. There were, however, provisions within the Laws protecting the rights of both partners in a marriage union between slaves, and laws specifying the rights of both partners and their offspring in a marriage between slave and free. There was apparently no impediment in Hittite law to mixed marriages of this kind.

SLAVES

Undoubtedly Hittite society contained a substantial slave population. Some slaves were acquired through slave markets, other persons were enslaved by creditors for inability to pay a debt, though probably in time they could regain their freedom if they or other members of their family were able to discharge their debt. A man who had committed murder might be enslaved by his victim's family, or surrender to the family one of his sons in his place. But by far the largest number of persons whom we might categorise as slaves had been taken as prisoners-of-war in the course of Hittite military campaigns, and transported to the Hittite homeland. Here many were allocated to the estates of king's officers, as we have noted. But large numbers were kept by the king himself, either for service in his militia, or in the kingdom's temples, or for resettlement in sparsely populated or depopulated areas of the homeland, particularly in the frontier zones.¹⁹

THE KING'S FAMILY

As the kingdom grew in size and complexity, there were ever greater demands for skilled military commanders, administrators, and diplomats to ensure peace and stability within the kingdom's frontiers, and to facilitate wherever possible alliances or at least friendly relations with the kingdoms of His Majesty's peers. Appointments to the top military, administrative and diplomatic posts in the kingdom were made by the king himself, and almost invariably the top positions were occupied by members of his own family. Thus the office of *GAL MEŠEDI*, 'Chief of the Bodyguards', one of the most prestigious and important posts in the kingdom, was in all known cases occupied by one of the immediate members of the king's family – on several occasions the brother of the king, on at least one occasion, his son, the heir designate.²⁰ In the 14th century, Šuppiluliuma I took the unprecedented step of establishing direct rule over parts of the Hittite empire which lay well beyond the homeland and its peripheral territories. In the course of his Syrian campaigns which led to the destruction of the Mitannian empire, Šuppiluliuma established viceregal seats in the conquered cities of Ḫalab/Aleppo and Karkamiš, appointing his sons

¹⁹ In general on slavery in the Hittite world, see Bryce 2002, 51-55, 105-07.

²⁰ Our information on the *MEŠEDI* comes primarily from a Middle Hittite text 'Instructions for the *MEŠEDI*', IBoT 1.36 (CTH 262), discussed by Beal 1992, 212-14. Only the first tablet of the Instructions has survived, which deals with the *MEŠEDI*'s ceremonial duties. See also Bryce 2002, 21-23.

Telipinu and Šarri-Kušuh (respectively) as the first viceroys. Henceforth the viceroys exercised within the Syrian region the most important roles – military, judicial, religious – of the Great King himself.

Other sons, or surrogate sons, were used on high-level diplomatic missions, like Hišmi-Šarrumma, dispatched to Egypt by Hattušili III to conclude a deal with the Pharaoh Ramesses II over the transportation of Egyptian grain to the Hittite world. Some princes like Nerikkaili and the ill-fated Zannanza were used for marriage alliances with the family of a foreign or vassal ruler, though it was much more common for the king's daughters to serve as the instruments for marriage unions with foreign or vassal kingdoms.

Concubinage undoubtedly played a major role in ensuring that the king had a ready supply of both sons and daughters for fulfilling the duties incumbent on members of the royal family. Queen Puduhepa commented that when she first arrived in the Hittite court as the new bride of her husband Hattušili, she already found the palace nurseries full of little princes and princesses. Even so, demand was not always matched by supply. This led to the appointment of a number of surrogate sons who were given the title DUMU.LUGAL 'son of the king' with full authority to deputise for the king in both judicial and diplomatic activities. But surrogate principedom was at best an expedient, and even at vassal level a status-conscious local ruler might object to dealing with an official, or marrying a 'princess', who was clearly not one of the king's genuine, legitimate offspring.

VASSAL STATES

At its greatest extent the Hittite king ruled over a network of vassal states that extended across Anatolia through northern Syria to the Euphrates and southwards through Syria-Palestine to the region around Damascus. The vassal states were under the immediate control of rulers of local origin, who had been appointed to or endorsed in their positions by the Great King himself. The treaties which formalised their subservience to the Hittite crown were in the nature of personal compacts between overlord and vassal. They stipulated both the vassal's obligations to his overlord – in matters such as intelligence-gathering in the region of the vassal state, the payment of tribute, and the provision of military support when called upon – and the obligations which the overlord undertook for the benefit of his vassal. The Great King promised to protect the vassal from enemies both within and beyond his kingdom, and also guaranteed the succession to the vassal throne in his treaty-partner's direct family line. In the event that a king made one of his daughters available for marriage to a

vassal ruler, the treaty stipulated that she become the vassal's chief consort and that it was her offspring who provided the heirs to the vassal throne.²¹

Provided the vassal met his treaty obligations, he was allowed almost complete freedom in the running of his state. Unlike Egypt's management of its Syro-Palestinian territories, Hittite kings very rarely stationed their own personnel in a vassal state. Occasionally a garrison of Hittite troops was posted to a region which had become seriously unstable or was in a strategically important frontier zone vulnerable to enemy incursions. But chronic manpower shortages within the Hittite kingdom discouraged any significant deployment of Hittite personnel within the vassal states. This rather than reasons of diplomatic sensitivity kept direct Hittite involvement in the affairs of these states to a minimum. Of course the main exception to this general rule was the viceregal kingdoms established at Ḫalab/Aleppo and Karkamiš. We should note too that in the 13th century the kingdom of Tarḫuntašša in southern Anatolia, which had for a time become under Muwatalli II the Hittite royal capital, was placed under the direct rule of a man called Kurunta, the nephew and protégé of Muwatalli's brother and successor but one Ḫattušili III. Sometimes referred to as an appanage kingdom, Tarḫuntašša became in effect, for a short time, a third viceregal seat.

Several states within the Hittite realm enjoyed *kuirwana* (loosely 'protectorate') status. Kizzuwatna and the rump state of Mitanni belonged to this small category (the latter after the Hittite conquest of it in the 14th century).²² In theory these states were independent allies rather than subjects of Ḫatti. Their rulers were theoretically superior to vassal kings, as recognised ceremonially on their visits to the Hittite capital, and practically in the granting of certain privileges, such as exemption from tribute and in some cases the right to annex territories won from the enemy in campaigns undertaken at the behest or with the approval of the Hittite king. But in most respects they had little more independence than a vassal, and above all no right to enter into independent relations with a foreign king.²³

CONCLUSION

Excavations which began a hundred years ago in the Hittite world have brought to light a great range of information, both material and written, about the

²¹ The most important of the Hittite treaties have been translated with brief commentaries by Beckman 1999, 11-124.

²² When it was henceforth generally known as Ḫanigalbat.

²³ On the 'protectorate' treaties, see most recently Imparati 1999, 368-72.

history of this world and the nature of the society, or rather the plurality of societies, which developed within it. From this information it is clear that while not themselves a highly innovative people, the Hittites absorbed and adapted to their own cultural, social, and ethical environment many features of the antecedent and contemporary civilisations of the Near Eastern world. In the process, they preserved from these civilisations much for us that might otherwise have been lost. Thus they provide an important element in the continuum of human development. Almost certainly they played, even if indirectly, a major role in the transmission westwards of social and cultural traditions, extending in some cases back to the Early Bronze Age civilisations of Mesopotamia, to the later worlds of classical Greece and Rome.

BIBLIOGRAPHY

- Alp, S. 1991: *Hethitische Briefe aus Maşat-Höyük (TTKY VI.35)* (Ankara).
- Beal, R. 1992: *The Organization of the Hittite Military (THeth 20)* (Heidelberg).
- Beckman, G. 1995: 'Royal Ideology and State Administration in Hittite Anatolia'. In Sasson, J.M. (ed.), *Civilizations of the Ancient Near East* (New York), 529-43.
- 1999: *Hittite Diplomatic Texts*, 2nd ed. (Atlanta).
- Bryce, T.R. 2002: *Life and Society in the Hittite World* (Oxford).
- 2005: *The Kingdom of the Hittites*, new ed. (Oxford).
- Gurney, O.R. 1990: *The Hittites* (London).
- Hoffman, I. 1984: *Der Erlass Telipinus (THeth 11)* (Heidelberg).
- Hoffner, H.A. 1997: *The Laws of the Hittites – A Critical Edition* (Leiden/New York/Cologne).
- Imparati, F. 1999: 'Die Organisation des hethitischen Staates'. In Klengel, H. *Geschichte des Hethitischen Reiches (HdO Abteilung 1.34)* (Leiden/Boston/Cologne), 320-87.
- Klengel, H. 1965: 'Die Rolle der "Ältesten" (LÚ^{MES} ŠU.GI), im Kleinasien der Hethiterzeit'. *ZAss* 57, 223-36.
- Pritchard, J.B. 1969: *Ancient Near Eastern Texts relating to the Old Testament*, 3rd ed. (Princeton).
- Singer, I. 1999: 'A New Hittite Letter from Emar', in Milano, L., de Martino, S., Fales, F.M. and Lanfranchi, G.B. (eds.), *Landscapes. Territories, Frontiers and Horizons in the Ancient Near East* (Papers presented to the XLIV Rencontre Assyriologique Internationale, Venice, 7-11 July 1997), vol. 2 (Padua), 65-72.
- 2002: *Hittite Prayers* (Atlanta).
- Süel, A. 2002: 'Ortaköy-Shapinuwa'. In Yener, K.A. and Hoffner, H.A. jr (eds.), *Recent Developments in Hittite Archaeology and History. Papers in Memory of Hans G. Güterbock* (Winona Lake, IN), 157-65.
- von Schuler, E. 1957: *Hethitische Dienstanweisungen für höhere Hof- und Staatsbeamte (AfO Beiheft 10)* (Graz).

CHAPTER 5

ENVIRONMENT AND ECONOMY IN HITTITE ANATOLIA

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Abstract

Palaeo-environmental investigations in and around Hittite cities in recent years have increased our knowledge about the Bronze Age landscape and the agrarian economy in Hittite Anatolia. The main cereals grown by the Hittites were barley and several species of wheat such as einkorn, emmer and bread wheat. Pulses enriched the Bronze Age diet as well as collected fruits and nuts. Highly developed grain storage techniques were detected at Boğazköy and other sites. The faunal analysis of different Hittite sites in Turkey revealed well-developed animal husbandry and a good knowledge of breeding practices. The most numerous domesticates kept were cattle, sheep and goat. The present study has revealed little importance of hunting game. Notwithstanding, the variety of wild animals found is remarkable, and allows some conclusions about the former environment.

INTRODUCTION

The ruins of large Late Bronze Age cities in Central Anatolia, such as Boğazköy-Ḫattuša¹ and Kuşaklı-Sarissa² raise a number of questions concerning the economic background of Hittite civilisation. Natural resources and the agrarian production certainly formed the basis of Hittite economy and culture.

For a long period of time archaeological investigations focused mainly on architecture, artefacts and on the written heritage in the form of clay tablets. While written sources often tell the story of military success and conquests, list kings and address religious matters, information on daily life and the characteristics of agriculture are rarely transmitted. But agriculture fed the rural population, the urban elite and, last but not least, the army, thus underpinning the economy and hence military and political success. Even if heroic deeds

¹ Bittel 1983; Neve 1993; Seeher 1997; 1998; 1999a-b; 2000; 2001.

² A. Müller-Karpe 1995; 1996a-b; 1997; 1998; 1999; 2000; 2001; 2002a-b; 2004a-b; 2006.

dominate history, the duties of the quartermaster must have been of crucial importance to the outcome of a battle. Likewise in times of peace, a state as a complex community needed stable economic and ecological conditions. Otherwise there would have been continuous adaptation to a changing demand for resources. Therefore, knowledge of the Bronze Age landscape is of crucial importance for understanding the Hittite economy.

In reconstructing the economic and ecological conditions of the Anatolian Bronze Age several methods have been applied. As well as archaeological investigation and philological study, various natural sciences complete the picture. Botanical 'macro'-remains, for example charred seeds and fruit, help us to reconstruct the practices of agriculture, plant collection and the production, distribution and consumption of food. Charcoal particles are used to obtain information about the selection of wood for architectural purposes, heating and cooking. They provide additional information on the character and composition of woodlands in the environs of a settlement. In comparison with this, fossil pollen grains – botanical micro-remains – are investigated to reconstruct the natural environment and changes to it under the influence of human occupation of the landscape. Archaeozoology elucidates the composition of livestock and the role of game in the nourishment of prehistoric people. The results of these investigations provide additional information on the character³ of the environment in the area around a settlement. All these methods help us to understand the ecological and economic background of Hittite civilisation.

LANDSCAPE RECONSTRUCTION

Studies focused on pollen analysis in Turkey started in the later 1960s. The aim of the early investigations was to gain knowledge about the general climatic and vegetational history. Thus they did not deal primarily with archaeological questions. A number of pollen diagrams exist but the number of publications useful in furthering archaeological study is small.³ Most of the older investigations have few if any independent datings, thus the chronology is often weak and there is a great risk of circular argument. The purpose of modern investigations is to produce high resolution diagrams based on a 14C chronology.

In view of the changing size of the Hittite empire between the 17th and the early 12th century BC and the small number of high resolution pollen diagrams

³ Summarised in Roberts and Wright 1993; Bottema *et al.* 1995; van Zeist and Bottema 1991.

from this area, a general reconstruction of the Hittite landscape is not possible. Different types of modern landscape are included in the area of interest, thus it is necessary first to compare the Bronze Age situation with the modern one.

Our own investigations were carried out in the vicinity of Kuşaklı-Sarissa, some 50 km south of Sivas. The site itself is located in an altitude of 1600 m above sea level on the edge of a fertile valley. Nearby on a hill side at about 1900 m altitude, there are a spring and a small lake (Fig. 1). The pond is circular in outline and a number of architectural traces indicate that the lake is artificial.⁴ Its close relation to the city of Sarissa is also indicated by textual sources.⁵ These describe the pond and its surroundings as a sacred area. According to the name of one of the gods who was venerated at the place, the lake is named Šuppitaššu Gölü. Sediments from this lake provide us with material for palaeo-environmental studies comprising the last 12,000 years. Thus the lake already existed in pre-Hittite times, but it was remodelled and became part of the sacred landscape only during the Hittite period.

Today the landscape is bare of any tree cover except for poplar plantations around the houses and wells. While the flat valley floor is used mainly for cereal cultivation, the mountain slopes are used for grazing cattle, sheep and goats. After the harvest and before ploughing, the fields are also used for grazing. As no wood is available for fuel the traditional heating material is pellets made of dung and chaff. The continental climate and the high altitude imply strong winters with a long lasting snow cover. Thus the number of livestock is restricted by the availability of space in the houses and the amount of winter fodder.

According to the pollen diagram the landscape must have had a very different character in the Bronze Age. The pollen influx in this phase is dominated by pine oak and hazel pollen, representing different woodland types of deciduous and coniferous trees. This pollen composition indicates favourable climatic conditions in the 15th and 14th centuries BC. A remarkable decrease in pine pollen around 1600 BC seems to have been a consequence of human impact on the natural environment. Around 1400 BC oak and hazel show a distinct retreat; at the same time vine pollen regularly occurs, obviously due to human activity influencing the composition of the forest. The contemporary increase of mugwort and pollen of the goosefoot family indicates a growing amount of steppe vegetation in the surroundings of the site. Thus we have to envisage a pattern of fields and steppe-like vegetation on the valley floor. At the edge of the valley, where hydrological conditions are better, deciduous woodland

⁴ A. Müller-Karpe 1998, 108-09; 2002b, 187-88 with Abb. 12-13.

⁵ Wilhelm 1997, 9-15.



Fig. 1. Map of the vicinity of Kuşaklı-Sarissa. The 'Şuppitašu Gölü' is located in mountains south of the city. The sediments of this lake provided material for important palaeo-environmental studies (after A. Müller-Karpe 2002b, Abb. 1).

consisting of oak and hazel must have existed. This woodland was degraded by grazing cattle and by clearings for fuel and timber. Between natural steppe and woodland we normally have an extensive steppe-forest with single trees or small groups of shrubs and trees. But this vegetation is now severely degraded by grazing. Where the steppe to woodland transition depends on altitude this steppe-forest may have formed just a narrow zone. At higher altitudes mixed deciduous and coniferous woodland consisting mainly of pine would have occurred. Even this remote woodland was exploited by Bronze Age settlers, and indication of the destruction and opening up of the forest are visible in the pollen diagram. Strong and abrupt fluctuations in the pine values indicate unstable conditions. A selective exploitation of timber suitable for building would have occurred in these areas, whilst grazing too affected the forest. In Hittite times the direct surrounding of the well and the sacred pond might have been an area with restricted grazing and access

WOOD CONSUMPTION

Further information on the Bronze Age environment in Central Anatolia is provided by charcoal analyses. Wood was used in Hittite times for many purposes. A large quantity was consumed as building timber,⁶ and, due to the strong continental climate, as firewood. In addition, many objects and tools, not normally preserved in the archaeological record, were made of wood. Other uses, such as bark for tanning or as raw material for fibres and leafs for fodder or as a dye are not proven but are very probable. Thus trees were an important source for raw materials.

The large amount of timber used in building activities supports the assumption that woodland must have been an important component of the Bronze Age landscape. From pollen analyses we also know that these trees grew in the vicinity of the city. From the architectural point of view, the length of timber for roofing limits the size of the individual rooms in a building. The largest rooms are about 6 m in width. From Building C in Kuşaklı, measuring 75 × 65 m, many charcoal fragments show that a very dense wood was used. Samples with eight annual rings per mm indicate a very slow growth, thus a high quality of the timber. Such a wood is strong enough to guarantee static support for the thick ceilings of Hittite buildings. However, such a wood needs a very long time to grow and after deforestation it takes centuries for the

⁶ For the use of timber in Hittite architecture, see the contribution by Mielke in this volume, p. 159

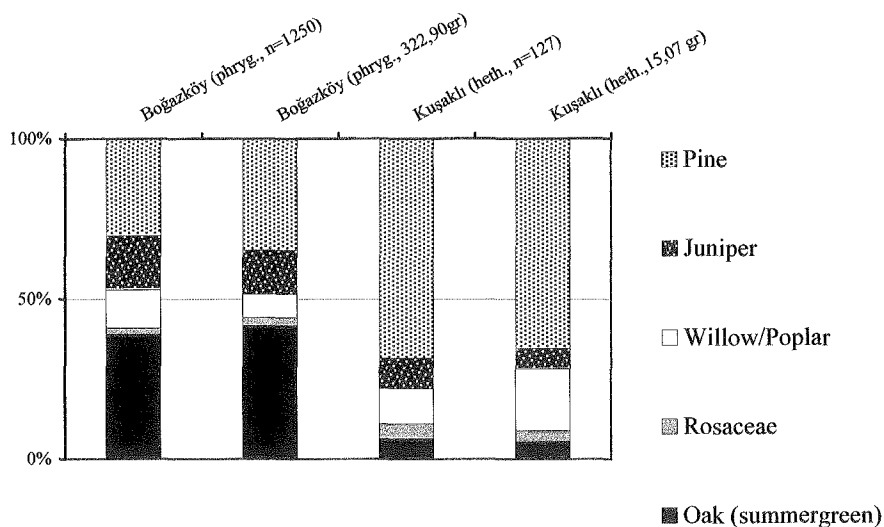


Fig. 2. Frequency of wood species from the excavations in Boğazköy-Ḫattuša and Kuşaklı-Sarissa (after Dörfler *et al.* 2000, Abb. 9).

landscape to recover. If the deforested areas were used subsequently for grazing, the natural reforestation would have been impeded further. We can assume, therefore, that in the later part of the Bronze Age wood was not available in the same quantities as at the beginning of the settlement in the 16th century BC. The efforts required to supply the settlement with adequate amounts of wood must have increased strongly in time.

Investigation of charcoal from the excavations in Boğazköy-Ḫattuša and Kuşaklı-Sarissa provides the analytical background for these theoretical assumptions. In Kuşaklı the dominance of pine charcoal shows that pine was the principal wood used in construction (Fig. 2). Most of the charcoal particles show a very narrow width of ring, indicating slow growth under difficult conditions. Oak, *Rosaceae* and juniper may have been used for fuel or as material for craftsmen. The subordinate role of oak can be explained by the shape of oak trees in the steppe-forest region: they were normally small and branched, whereas tall trees, suitable as timber for building purposes, are rare. In Boğazköy-Ḫattuša, at the edge of the modern steppe zone, oak forms a much higher proportion in the charcoal analyses. Two explanations may be offered: either there were fewer pine trees available in the vicinity of the city, or oak had much better growing conditions and was suitable as timber. So far charcoal analyses from Boğazköy-Ḫattuša are available only from Iron Age contexts. It will be interesting to see if the situation was the same in the Hittite period.

THE AGRARIAN ECONOMY

While attention has focused on the cultural, military and political achievements of the Hittites, the role of agriculture is often forgotten. There was a well-established and organised system of agrarian production yielding sufficient surpluses to supply the nobility, priests, civil servants, craftsmen, merchants and soldiers. The maintenance of a huge empire is one of the most fascinating achievements of Hittite civilisation.

Other civilisations of the Near East, such as Egypt and Mesopotamia, established irrigation systems to become independent of the uncertainties of the weather. Without such techniques the Hittites managed to establish a well-running agrarian system based on natural precipitation. It is not surprising, therefore, that the Weather God and the Sun Goddess were the most important gods in the Hittite pantheon.

Written sources confirm that the Hittites knew a large number of useful plants. A few examples from the archaeobotanical point of view will be given for these extraordinary achievements in the agrarian economy.

BASIS OF THE ECONOMY

Cereal cultivation and animal husbandry were the bases of agrarian production. In addition, other natural resources such as wood and wild plants were used for nutrition or for medical or technical purposes. We know very little about the organisation of the agrarian production. The system of impost and taxes must have been organised very strictly and hierarchically.⁷ It is assumed also that the authorities dictated what species of grain were grown, as well as when and how.

Analyses of botanical macro-remains from excavations allow us to list the main crops. However, conditions of preservation are not always optimal. In well-ventilated soils the seeds decay unless they are charred. Therefore the parts preserved are those that were processed directly or indirectly with fire. Fruit growing or gathering is much more difficult to reconstruct by archaeobotanical means, as are vegetable growing and the collecting of plants. Chance discoveries, such as a charred grape pip from Kuşaklı, are clearly exceptions. Many aspects of the agrarian economy are elucidated by the charred remains of weeds.

To understand fully the agrarian economy of the Hittite period we must combine analysis of archaeobotanical and written evidence. An example of this is offered here regarding the use of weeds as weapons and as a means of putting pressure on rebellious provinces (see below).

⁷ Siegelová 2001.

BASIS OF NUTRITION

Barley and different species of wheat formed the basis of cereal production. A few examples of millet are reported from Hittite and Iron Age contexts in Central Anatolia, but obviously millet played no important role in the supply of carbohydrates. A summary of the evidence of plant macro-remains is given in Fig. 3.

Barley. In many Bronze Age societies barley was the base of nutrition. One reason for this is a guaranteed minimum harvest: even in extremely bad years a sufficient yield can be expected. Another important aspect is that barley is resistant to frost and can be grown on poor soil. Under difficult growing conditions barley bears a much better potential than other cereals. On the other hand, under optimal conditions it yields less than species of wheat.

A good example of the role of barley comes from the granaries of Boğazköy-Hattuša: small and poor grains in enormous quantity indicate either a bad harvest or large-scale cultivation of barley on unfavourable soil. Barley seems to have provided the basic supply of carbohydrates. It also was used as fodder. Even today old people say: 'In good times we eat wheat and the cattle eats barley, in bad times we eat barley and the cattle.'

Several techniques existed for the preparation of barley as food: evidence of simple pulp and flat bread was found at Kuşaklı-Sarissa. Furthermore, barley was used to brew beer; a *bulgur*-like intermediate product is also attested (see below). In Sarissa the barley used for brewing was exceptionally large. Obviously, high quality grain was chosen to supply the brewery, which was located in a temple.

Another mode of preparation was an intermediate product akin to modern *bulgur*. Nowadays in Anatolia *bulgur* is made of wheat (*Triticum durum*) that is boiled, kiln-dried and crushed to get a high value cereal product. From Kuşaklı we also know that barley was boiled, kiln-dried and crushed before it was used for food preparation. For the Hittite army, mobility and speed were vital. This required not just roads and transport facilities but also provisioning for the soldiers. Food preparation is normally time consuming when cereals have to be boiled. Using an equivalent to *bulgur* as a kind of instant food saved a lot of time and enhanced mobility.

Wheat. The Hittites cultivated a large number of wheat species. Archaeobotanical finds provide evidence of einkorn (*Triticum monococcum*), emmer (*Triticum dicoccum*), spelt (*Triticum spelta*) and bread wheat (*Triticum aestivum*). A unique find is that of Sanduri wheat (*Triticum timopheevi*) from Kuşaklı. This

	Plant remains	Kuşaklı (Hitt.)	Boğazköy (Hitt.)
Cereals	<i>Triticum monococcum</i> Einkorn wheat	+++	++++
	<i>Triticum dicoccum</i> Emmer wheat	++++	++
	<i>Triticum spelta</i> Spelt	+	
	<i>Triticum timopheevi</i> Sanduri wheat	+	
	<i>Triticum aestivum/durum</i> Bread/Hard wheat	++++	+++
	<i>Hordeum vulgare</i> Barley	++	++++
	<i>Setaria italica</i> Foxtail millet	+	
Pulses	<i>Lens culinaris</i> Lentil	+	+
	<i>Vicia ervilia</i> Bitter vetch	+	+
	<i>Lathyrus sativus</i> Grass pea	+	++
	<i>Pisum sativum</i> Pea	+	+
Oil-/Fibre plants	<i>Linum usitatissimum</i> Flax	1	+
Fruit/Nuts	<i>Vitis vinifera</i> Grape vine	+	+
	<i>Corylus avellana</i> Hazel		+
	<i>Ficus carica</i> Fig		+

Fig. 3. Plant macro-remains from Boğazköy/Hattuša and Kuşaklı-Sarissa.
 1 = single finds, + = rare finds, ++ = occasional finds, +++ = regular finds,
 ++++ = dominant species.

species is barely reported from archaeological contexts and even today it is very rare. But it is important for breeding on account of its high resistance to fungal infestation. All the abovementioned species had and still have a number of local varieties. Archaeobotanical research does not allow us to distinguish between different varieties and growing conditions (both moisture and the quality of the soil influence grain size and shape), but we can be sure that in Hittite times a large number of local varieties existed and, especially in the slowly grown structures of traditional farming, that they had a chance to adapt to special conditions. Nowadays, these local and regional varieties are of great interest to breeding specialists; often they have special attributes such as adaption to climate and soil conditions or resistance to particular pathogens, and commonly they have higher yields than imported varieties unadapted to local growing conditions. Before the introduction of artificial fertilisers, pesticides and irrigation these aspects were of great importance for agrarian production.

The Hittites were called the ‘people of 1000 gods’ because they used to adopt regional gods and goddesses after occupying a region. This practice facilitated the acculturation of a conquered population. Likewise they may also have kept local agrarian practices and cereal species as the local farmers were used to them and the yields were good. The large number of plant species and varieties mentioned in the texts and found in archaeobotanical samples may support this assumption. If this is the case, the occupation of a region did not consist simply in the incorporation of a territory into the empire but also in the incorporation of people, gods and agrarian products into the culture and economy.

GRAIN STORAGE

During excavation at Boğazköy in 1998-1999 a large storage complex from the 16th century BC behind the postern wall on the north-west slope was excavated. This building is about 118 m long and between 33 and 40 m wide (Fig. 4). The complex has a total of 32 almost rectangular chambers, measuring about 13-16 m × 6 m, which are lined up in two rows of 16 rooms each. The stone-based mudbrick walls of the complex are up to 1.5 m thick and reach a height of 2 m. Most of the complex must have been subterranean. A total of 7000-9000 m³ of grain could be stored in the building. Twelve storage rooms were destroyed by fire, and in at least five rooms large quantities of carbonised cereal grains are still preserved in layers up to 0.8-1.2 m thick.⁸ The soundings

⁸ Seeher 1999, 332-34; 2000a, 356-67; 2006.

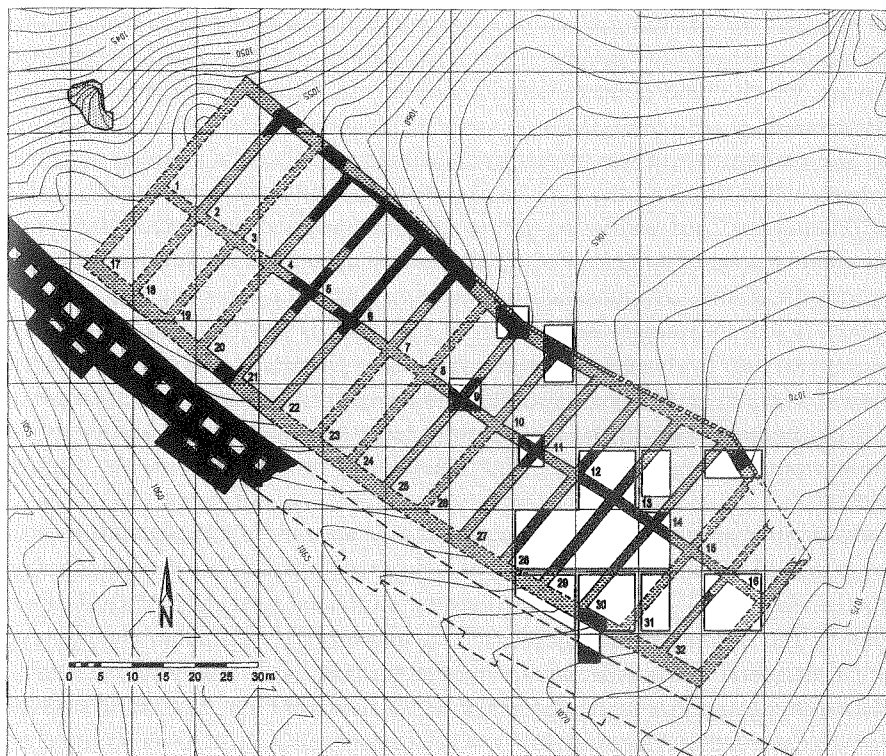


Fig. 4. Plan of silo complex behind the postern wall, Boğazköy-Hattuša (after Seeher 2001, Abb. 1).

and corings in the rooms showed that probably several hundred tons of grain is still preserved. In the excavated parts of the storage building a total of about 4 tons of carbonised material was systematically sampled. The material ranged from white ash, through carbonised broken grains, to a minor fraction of remarkably well-preserved grains and weed seeds. Four rooms of the storage building contained two-rowed hulled barley (*Hordeum distichum*), whereas another chamber contained mainly einkorn (*Triticum monococcum*).⁹ The grain was stored in the building in an oxygen free atmosphere: the chambers were sealed by a 1-1.5 m thick layer of loamy, clayey soil and mud bricks, to prevent the intrusion of air and moisture. This system of bulk grain storage functioned quite well.¹⁰ No insect pests were found, except for some rare concentrations

⁹ Neef 2001, 336-41.

¹⁰ For a general discussion on this topic, see Seeher 2000b.

of the corn weevil (*Sitophilus granarius*) in the einkorn storage. Even in this infected material the number of damaged grains was very low. Germinated grains, which could point to damp conditions in the grain storages, were not discovered.

The einkorn wheat was stored in its spikelets. Einkorn is a hulled or glume wheat; when threshed the ears break into its component spikelets, the grains still being enclosed within the glumes. For human food preparation the grains of einkorn need to be dehusked, in contrast to naked or free-threshing wheats, where the grains are dehusked during threshing. The advantage of a hulled wheat is that its storage, in the form of spikelets, is less complicated than the storage of naked wheat, i.e. of pure grains. The glumes around the grain of the hulled wheat make that less susceptible to the damp conditions and insect pests. This is probably one of the reasons why large-scale cultivation and therefore bulk storage of naked wheats did not become popular before the Roman period.

Einkorn is grown mainly as a winter crop on account of its resistance to frost even in cold winters. For the sowing of einkorn the spikelets are used. According to G.C. Hillman,¹¹ einkorn was still being cultivated near Alaca Höyük up to the 1970s. Nowadays the cultivation of einkorn has, with the exception of some marginal fields in mountainous regions in the west and north of Turkey, disappeared, as it has in the rest of the world. The glutinous flour from einkorn is nutritious with a generally higher protein content than the flour from naked wheats. The long, graceful but tough straw is very well suited for all kinds of weaving.¹²

The barley in the four other storage rooms belongs to the two-rowed hulled variety (*Hordeum distichum*). Like the einkorn, the barley grains were stored within their glumes. Whereas einkorn after threshing has to be pounded or ground to free the grains, the grains of hulled barley partly adhere to the inner glumes and cannot be fully separated in this way. The flour of the ground barley has to be sieved to rid it of glume fragments. Barley is a valuable food for livestock. Its straw is often used for building, for instance as temper for mud bricks.

All hulled grains are excellent for brewing – the grains do not need to be dehusked for the malting process. Two-rowed hulled barley is the finest for malting because of its relative low protein content. Since the Hittites regarded beer as a basic part of their normal diet,¹³ the amounts of barley stored could

¹¹ Cited by Nesbitt 1993.

¹² Körber-Grohne 1988.

¹³ Röllig 1992.

be used to produce excessive amounts of beer: a ton of barley grain can give between 800 and 900 kg of malt, from which 40 to 50 hl of beer can be brewed.¹⁴

Barley now is grown only on small plots in the vicinity of Boğazköy. Most of the fields are sown with the free-threshing hard wheat (*Triticum durum*) in rotation with chickpea (*Cicer arietinum*).

The grain from the storage building at Boğazköy is full of seeds of field weeds. According to the observations of Hillman¹⁵ on traditional processing of glume wheats in Turkey, the einkorn crop in the storage room was threshed, raked and winnowed, and a first sieving with a coarse sieve took place. These steps removed the awns, straw fragments, straw internodes and the culm bases of the wheat plant, together with most of the weed-heads. Fortunately, most of the weed seeds and some smaller weed-heads were still present between the einkorn spikelets. Almost 70 field weed taxa have been identified so far. There is no significant difference between the field weed composition in samples from different storage rooms, not even between chambers filled with barley and einkorn. The composition of the field weed flora in the storages can provide valuable information on the growing conditions of the crop, such as soil quality and climate. The field weeds can be differentiated between those more or less indifferent to their growing conditions and those with special preferences. The indicative field weeds found in the silo show a preference for winter crops on productive, calcareous, clayey to loamy soils. Some are typical for fields on drier soils, thus are susceptible to drought. These growing conditions are found in a large area around Boğazköy, thus it is likely that the grain from the silo came from thereabouts. All of the field weed taxa found are indigenous to Anatolia, thus excluding the import of grain from other climatic regions. The high proportion of weed seeds to the stored crop is remarkable. Taken together with the observation that the grains of the stored crops were, without exception, rather small, this leads to the conclusion that the fields of these cereals were rather poorly tended.

The other major storage facilities excavated in the city of Boğazköy were 11 large, mainly rectangular silo pits from the 13th century BC on Büyükkaya (Fig. 5).¹⁶ On the stone floors at the bottom of these silos, still whitish layers of organic material were sometimes present. The preservation of this material was very poor, consisting of almost completely decayed plant material. Only cereal straw and some spikelet remains of einkorn were recognised. Pollen

¹⁴ Brouwer 1972.

¹⁵ Hillman 1984.

¹⁶ Seeher 2000b, 270-78.

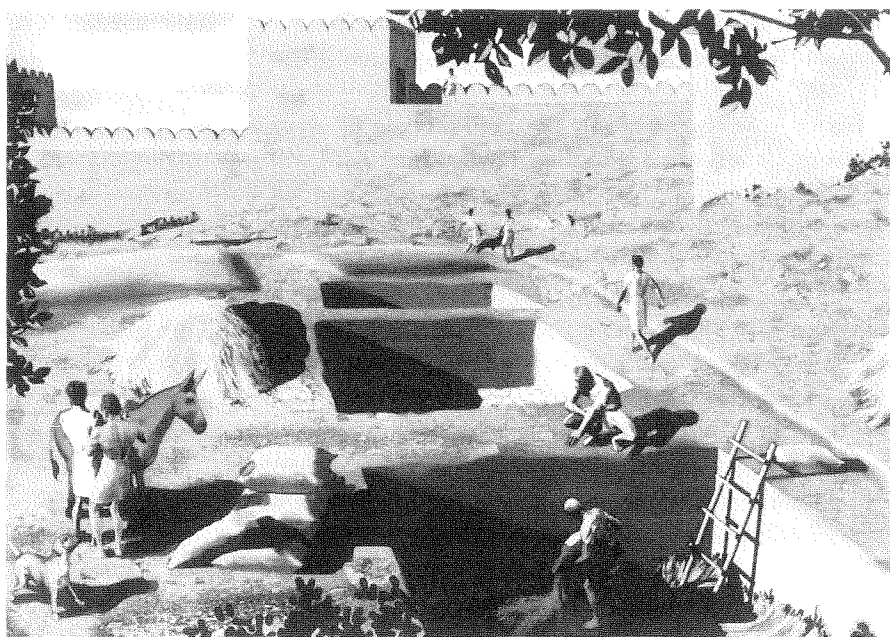


Fig. 5. Boğazköy-Ḫattuša. Reconstruction drawing of the silo pits on Büyükkaya (Boğazköy Expedition; drawing: U. Betin).

analysis of this material by S. Jahns revealed mainly barley pollen, indicating the presence of barley straw and/or grain. Although it is tempting and likely that einkorn and barley grain were also stored in bulk in these silos, as in the storage building from the 16th century BC, this can no longer be fully verified.

Other possible storage facilities are the magazines containing large pithoi, for instance around Temple I in the Lower City of Ḫattuša.¹⁷ No indication of their contents survive in most of the pithoi, except for two small finds of grain from a large pithos and a vessel described by M. Hopf;¹⁸ interestingly, these originated from free-threshing cereals: a naked barley (*Hordeum vulgare* var. *nudum*) and a naked wheat (*Triticum aestivum/durum*). As already mentioned, the bulk storage of naked cereals is more complicated than of hulled. There seems to be a distinction between the bulk storage of hulled cereals in silos on the one hand and of naked cereals, and probably cultivated legumes, in pithoi or other ceramic vessels on the other, the latter most likely meant for human

¹⁷ Seeher 2000b, 287-88.

¹⁸ Hopf 1992.

consumption. In all probability the hulled wheats in bulk storage were also meant for human consumption, possibly for the lower classes of the society, as well as for feeding animals. For human consumption hulled cereals had to be dehusked. Implements to effect this, such as mill- or grinding stones or mortars, were rarely found at Boğazköy. However, it is mainly official buildings that have been uncovered at the site, so one has to bear in mind that dehushing could have taken place in parts of the city as yet uninvestigated.

Agriculture is, alas, barely mentioned in the many cuneiform texts found.¹⁹ The king and a larger class of nobles and dignitaries possessed large estates, each with a contingent of peasants, who held their tenements in return for their labour or payments in kind. Very likely the grain found in the silo building, which due to its size was surely under the control of the state, represents such payments and taxes from the fields in a wide area around the city.

BIOLOGICAL WARFARE IN THE HITTITE EMPIRE?

The ultimate punishment for a disloyal city was the destruction of its economic foundations. Even if no record of the contamination of fields survives, written sources indicate the practice of sowing weeds was well known. In the beginning of Hittite history, around 1720 BC, Anitta conquered the independent city of Ḫattuša after a rebellion under the local king, Piyušti. It is recorded that Anitta said: 'In the night I took (the city) by storm. On her place I sowed weeds instead.'²⁰ Some 150 years later it was Ḫattusili I who practised this kind of punishment against the disloyal city of Ullama, a serial rebel.²¹

In the archaeobotanical record we can identify potential 'biological weapons' that could ruin arable fields for several years. Two species found in Kuşaklı-Sarissa have the potential to ruin a field: one is a grass species with the name Bearded Darnel or Poison Rye Grass (*Lolium temulentum*); the other is a parasitic plant of the Cuscutaceae family known as Greater Dodder, Devil's Guts or Hellweed (*Cuscuta europaea*).

Lolium temulentum (Bearded Darnel). *Lolium temulentum* is a weed species that is well adapted to the growing conditions of the affected cereals. From germination to ripeness it is a competitor to wheat and barley species and it reaches nearly the same height as them. Thus *Lolium* gets into the harvest if

¹⁹ For a general overview, see Hoffner 1974.

²⁰ Neu 1974, 13, Z. 48; Bittel 1983, 27.

²¹ *KBo* 10.2 I 33-42, translated by del Monte and Tischler 1978, 452. Generally on this topic, see Haas and Wegner 1995.

just the ears are cut. Another characteristic is that it bears grains of different sizes in one ear.

The most important sign of a cultivated grass is the attribute of the spikelets to remain connected to the rachis until the ears are threshed. Wild grasses, on the other hand, separate into parts as they ripen. *Lolium* spikelets have both attributes: small spikelets fall off but large ones often stick to the rachis and thus survive the harvest. Furthermore, the large spikelets are nearly the same size as small cereal spikelets, thus they cannot be separated from the harvest by sieving. There is almost no effective way to separate *Lolium* from cereal grains if a field is infested. *Lolium* is quite dangerous. Consumed in large quantities it can cause serious poisoning. In German it is called ‘Taumelloch’, because people who eat it start to stagger. In former times it was said that a fungal infection caused the toxic effect of the grass but later on a nematode was detected in the grains. In the intestine of this worm live special corynebacteria that produce mycotoxins.²² This poison directly affects the central nervous system. Not all *Lolium* populations are infected by the nematodes but there is no way to distinguish between harmless and poisonous grains. Sowing *Lolium* would be a terrible punishment of a disloyal vassal. The seeds can survive in the soil for several years and have a long lasting effect.

Cuscuta[§] *europaea* (Greater Dodder, Devil’s Guts or Hellweed). Greater Dodder is a parasite mainly on legumes. The *Cuscuta* plants suck the nutrients from their host, which stays weak and small and yields a poor harvest. The *Cuscuta* seeds are very small and round. A handful of them can contaminate a large acreage. On an infected field the cultivation of legumes ceases to be rewarding. *Cuscuta* also has the potential to survive for several years in the soil, so an infection has a long lasting effect. With these attributes *Cuscuta* could be a crucial ‘biological weapon’.

Although both of these plants are attested at Kuşaklı-Sarissa, we do not suggest that the fields of Sarissa were devastated intentionally. Furthermore, it is not entirely clear whether the practice of ‘sowing weeds’ in the case of Ḫattuša actually refers to the fields of the city, or rather has to be taken as a metaphor for devastating the city itself.²³ However, it is an interesting fact that potential biological weapons with a devastating effect were available in the Late Bronze Age.

²² Frohne and Pfänder 1997; Rätsch 1998, 322-23; Pasternak 1991, 376-77.

²³ A different proposal was put forward by Durnford and Akeroyd (2005), who interpret the plant mentioned in connection with the devastation of cities as fennel.

ANIMAL ECONOMY

This section is based on faunal analyses of Hittite sites in Turkey. As animal bones from archaeological excavations are commonly kitchen refuse, they inform us primarily about which animals people kept and what meat they ate. Moreover, such finds reveal how the animals were exploited and what part the different domestic animal species played in the economy and the religious world. Age and sex distribution and the reconstruction of the body size of the animals from which the bones originate reflect animal husbandry practices and subsistence strategies in ancient civilisations. Finally, faunal remains, in particular those of wild animals, contribute to our knowledge of the environment around a site.

ANIMAL HUSBANDRY

During the Hittite period this was already well developed. As far as we can judge from the body size of the domesticates, the Hittites had a good knowledge of how to maintain and breed them. Domestic animals include horses, mules, donkeys, cattle, sheep, goats, pigs and dogs (Fig. 6.1-5). It is doubtful whether chicken was already a common fowl at that time. Chickens were introduced from India via Mesopotamia. The earliest and only record for the keeping of chickens in the Late Bronze Age comes from the easternmost part of the Hittite empire, from Korucutepe near Elāziğ.²⁴ In contrast, domestic geese belonged on Hittite farms,²⁵ and it is most likely that ducks did too.

Cattle, sheep and goats were the most numerous domestic animals in all Hittite towns and settlements. While in the Old Kingdom, the ratio of cattle to sheep and goats was 2:3, in the Great Empire the keeping of small ruminants intensified, thus the ratio changed to approximately 1:2, when dealing with ordinary settlement refuse. In Hittite sacred buildings the number of sheep, in particular rams, is very high, as seen in the bone samples from temples or other sacral institutions in Kuşaklı-Sarissa and Boğazköy-Ḫattuša.²⁶ A special situation was encountered at Building E unearthed on the Acropolis of Kuşaklı, dating to the 16th century BC.²⁷ This building contained faunal remains originating from cultic slaughters in a sacral building nearby; 83 % of them belonged

²⁴ Boessneck and von den Driesch 1975, 120-22.

²⁵ von den Driesch and Boessneck 1981, 57.

²⁶ von den Driesch and Vagedes 1997, 127-28; von den Driesch and Boessneck 1981, diagram 9.

²⁷ A. Müller-Karpe 2001, 231; 2002a, 336-37; Arnhold forthcoming.

to sheep, the majority of them male animals of large body size.²⁸ This demonstrates the prominent role of male sheep in Hittite cultic practices (Fig. 6.1). Evidence from other sites verifies this observation. In Ḫattuša, for example, the largest rams butchered for the ceremonies in Temple 1 measured 76 cm height at the withers.²⁹ Notwithstanding this, in Hittite temples male and large cattle were also more important than in ordinary living areas of the same sites. However, the reality of daily life may have been somewhat different. A list of the property of Šuppiluliuma mentions 10 cattle, 105 sheep and goats, two horses and three mules.³⁰ Thus, the quantity of small ruminants on farms was higher than is reflected by the animal bones analysed.³¹

Noteworthy is a Hittite instruction for temple personnel found in the Lower City of Ḫattuša. Here it is said that persons other than the participants of the celebrations were allowed to consume the meal prepared for the gods when it was not eaten up: 'And if you can eat (and) drink everything on that day, eat (and) drink it. But if you cannot, keep on eating (and) drinking it for three days; and with you let your wives, your children (and) your slaves eat (and) drink.'³²

According to the kill pattern, ruminants were slaughtered at any age, with a preference for adult animals. Sheep were kept for wool as well as for meat. Goats were kept mainly for their milk, as the overwhelming number of bones of females confirms. During their lifetime cattle were used as draught animals and for working on the fields. How the animals were exploited can also be observed from Hittite laws, where different designations for their use and the respective prices for the animals are mentioned.³³

Pigs played a minor role in the economy, but according to Hittite texts their fat was appreciated and regarded as most valuable, as reflected in the paragraphs about dogs. According to Hittite laws the killing of a dog was punished by a heavy fine (20 to 1 Šekel of silver according to the type of dog). However, if a dog had stolen and eaten pig fat and was caught by the owner of the fat, this person did not have to pay a fine when killing the dog in order to take the fat from the dog's stomach.³⁴

The percentage of equids in faunal remains from Hittite sites is very low and does not surpass 1.5 % of the assemblages. This does not mean that the Hittites kept but few equids. The contrary may be the case. They certainly had a great

²⁸ von den Driesch forthcoming.

²⁹ von den Driesch and Boessneck 1981, tabl. 18.

³⁰ Riemschneider 1958, 339.

³¹ See also Hongo 1996, fig. 3.1-2.

³² Sturtevant and Bechtel 1935, 153.

³³ Friedrich 1959; Güterbock 1961.

³⁴ Friedrich 1959, 45.

demand for horses, mules and donkeys for riding, driving, work and sport (Fig. 6.4-5). This demand might have been especially acute in the capital. The bone finds from the Great Temple in the Lower City of Boğazköy-Ḫattuša³⁵ and those from Büyükkaya³⁶ revealed that the Hittites did not eat the meat of equids. Thus, the animals were not slaughtered and their bones not thrown into the waste. This could explain the scarcity of equid bones in the faunal remains. In contrast, the inhabitants of the Early Iron Age settlement on Büyükkaya did consume the meat of horses, mules and donkeys, as evidenced by cut and chop marks on the bones. In addition, the value of equids in the non-material world of the Hittites is attested by the burials of horses and donkeys at Osmankaya.³⁷ From the long bones, a variation of the shoulder height of horses from 1.35 m to 1.45 m was calculated. Although it is difficult to assign individual bones to either a horse or a mule, some definitely determined mule bones show clearly that mules had the same body size as horses. This is true for all horses and mules from the Hittite empire.³⁸

Although Hittite texts mention different types of dog, fulfilling different tasks as watch-, hunting- and shepherd dogs (Fig. 6.2-3), the bones found are all of about the same size (ranging from medium sized to larger dogs, the latter still smaller than the huge shepherd dogs of today).

GAME AND OTHER WILD ANIMALS

Hunting contributed insignificantly to the diet of the inhabitants of the different Hittite sites. It can be assumed that hunting was primarily an amusement of the kings and their courtiers, as shown in Hittite and post-Hittite iconography (Fig. 6.6, 8). This general observation does not rule out the existence of professional hunters who, from time to time, sold game to households, to the court or to the temples (where such meat was part of the offering ceremonies to the gods). Cut marks on leopard- and lion bones originating from the area of the Great Temple in the Lower City in Ḫattuša confirm that the meat of these large wildcats was prepared during the offerings (Fig. 6.7).

In general, the quantity of bones of wild animals found in the different sites is low, from 1.5% to a maximum of 2.5 %. An exception is the bone assemblage excavated in the Great Temple in the Lower City of Ḫattuša, where game

³⁵ von den Driesch and Boessneck 1981, 44-45.

³⁶ von den Driesch and Pöllath 2004.

³⁷ Herre and Röhrs 1958.

³⁸ von den Driesch and Vagedes 1997, 131.

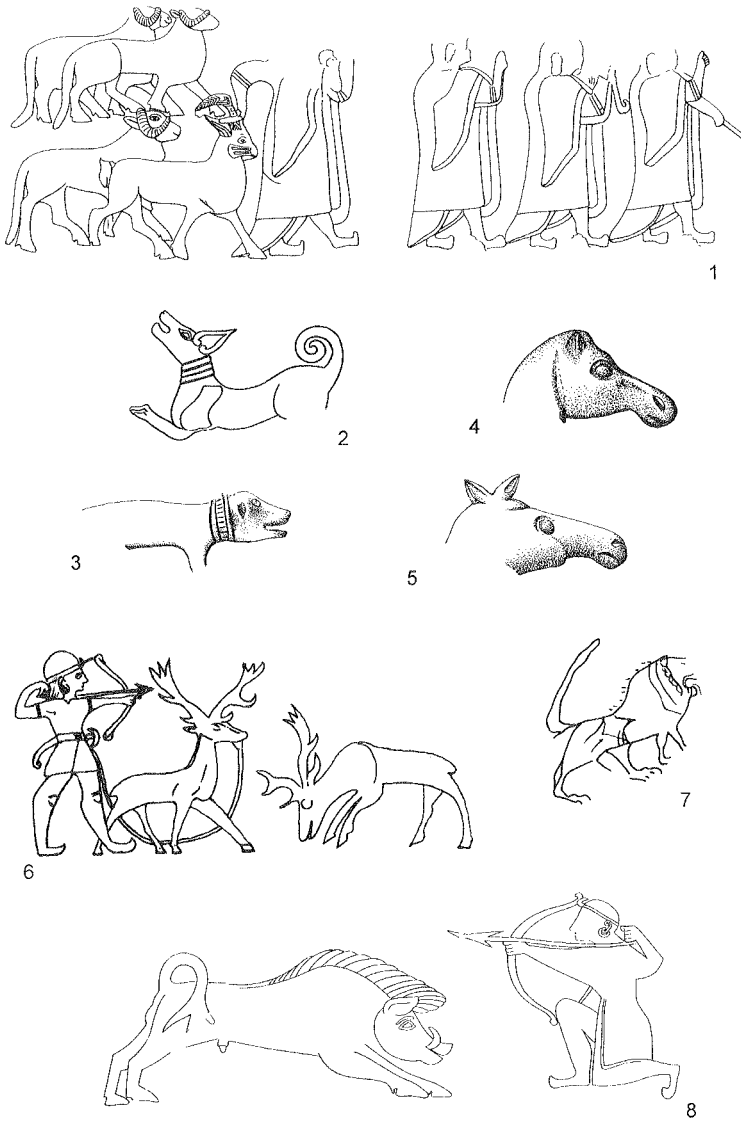


Fig. 6. Hittite depictions of various animals:

- (1) Rams on the reliefs at the Sphinx Gate in Alaca Höyük. The animals are led to the sacrifice in a procession (after H. Müller-Karpe 1980, Taf. 176, B1;
- (2) Dog on the reliefs at the Sphinx gate in Alaca Höyük (after Akurgal 1995, şek 58);
- (3) Dog on a relief sherd from Boğazköy (after Boehmer 1983, Taf. XXI.77);
- (4-5) Equids on relief sherds from Boğazköy (after Boehmer 1983, Taf. XXXVII.105-106);
- (6) Hunting scene on the Taprammi bowl. Remarkable is the technique of using a captive deer to attract wild animals (after Emre and Çınaroğlu 1993, fig. 23);
- (7) Sketch of a lion on a cuneiform tablet from Boğazköy (after Ünal 1989, fig. 2.4);
- (8) Boars hunt on the reliefs at the Sphinx Gate in Alaca Höyük (after Akurgal 1995, şek. 51).

forms 10-17 %, depending on the periods considered.³⁹ This situation may have arisen from the excavation methods deployed: during archaeological investigation of the capital between the 1950s and the 1970s, the excavators paid attention only to larger pieces of bone; sieving of the material was not practised. Nevertheless, in Boğazköy the proportion of wild animals was found to be the highest of all sites considered (Fig. 7).

In contrast to the low number of bones of game, the variety of species of mammals found is enormous (Fig. 7). The principal game species in all sites analysed was the red deer, *Cervus elaphus*, present in a large subspecies of considerable body size. Numerically it was followed by the wild boar, *Sus scrofa*, again of large size. Since all Hittite settlements were situated in mountainous regions, evidence of wild sheep and wild goat is also present in the samples. A great variety of carnivores was hunted, including large species like the brown bear, *Ursus arctos*, lion, *Panthera leo*, leopard, *Panthera pardus*, wolf, *Canis lupus*, and lynx, *Lynx lynx*. Although most of the remains of these carnivores bear cut and chop marks, an indication that their meat was used as food, the Hittite texts do not mention this type of meat being prepared during cultic ceremonies.⁴⁰

The presence of red deer indicates the existence of dense or open forest. Seen from today's landscape, it can be assumed that the environment of the Hittite capital was forested to a large extent. On the other hand, natural open (and humid) grasslands must have existed in the near and far neighbourhood of the town. This is shown by bone finds of two typical dwellers of open grassland: the crane, *Grus grus*, and the great bustard, *Otis tarda*. Most goose species visit a similar habitat when feeding. The situation around the Hittite town of Sarissa was somewhat different. Kuşaklı is situated in a wide plain, at an average altitude of 1600 m, the so-called Altınyayla (Fig. 1). As mentioned above, neither the plain itself nor the surrounding mountains are forested to any great extent today. Besides the crane and great bustard, already mentioned, further steppe elements have been identified: the little bustard, *Otis tetrax*, the ground squirrel, *Citellus citellus*, and the five-toed jerboa, *Alactaga euphratica*. These species indicate that at least some parts of the landscape surrounding the town were covered by open steppe. Furthermore, Kuşaklı is the only site to furnish proof for the Caspian snowcock, *Tetraogallus caspius*, an inhabitant of high, rocky alpine and subalpine meadows.

A similar situation to that described for Hattuša emerges from the bone remains encountered in Korucutepe. Here, according to faunal analysis, a mixture between open country and forests along the slopes of the mountains must have existed.

³⁹ von den Driesch and Boessneck 1981, tabl. 33.

⁴⁰ von den Driesch and Boessneck 1981, 60-62.

	Species	Boğazköy (1)	Boğazköy (2)	Büyükkaya (2)	Kuşaklı Temple I (1+2)	Kuşaklı West Slope (1+2)	Korucutepe (1)	Korucutepe (2)	Kaman Kalehöyük
	Total no. identified (Mammals and Birds)	519	7260	5037	4381	5310	1370	8961	1845
Mammals	<i>Cervus elaphus</i> Red deer	50	298	43	62	76	34	94	7
	<i>Capreolus capreolus</i> Roe deer	-	1	-	-	-	-	-	-
	<i>Bos primigenius</i> Aurochs	2	17	-	1	1	8	3	-
	<i>Ovis orientalis</i> Wild sheep	3	27	2	3	3	2	8	-
	<i>Capra aegagrus</i> Wild goat	-	-	1	-	3	1	10	-
	<i>Sus scrofa</i> Wild boar	10	89	12	1	1	2	25	-
	<i>Canis lupus</i> Wolf	-	1	-	3	-	1	4	-
	<i>Vulpes vulpes</i> Red fox	-	5	2	2	9	-	5	7
	<i>Ursus arctos</i> Brown bear	-	3	-	2	1	-	8	-
	<i>Meles meles</i> Badger	-	1	-	-	1	-	-	-
	<i>Mustela niyalis</i> Weasel	10	1	-	-	-	-	2	2
	<i>Vormela peregusna</i> Marbled polecat	-	-	-	-	1	-	-	-
	<i>Panthera leo</i> Lion	-	4	-	-	-	-	-	-
	<i>Panthera pardus</i> Leopard	-	4	1	-	-	-	-	-
	<i>Lynx lynx</i> Lynx	-	-	2	-	-	1	-	-
	<i>Felis silvestris</i> Wildcat	-	-	1	-	-	-	1	-
	<i>Lepus capensis</i> Hare	1	59	16	5	6	-	16	14
	<i>Citellus citellus</i> Ground squirrel	-	-	-	4	4	-	1	-
	<i>Alactaga euphratica</i> Jerboa	-	-	-	-	2	-	-	-
	<i>Spalax leucodon</i> Mole rat	-	-	-	5	3	-	-	-
	<i>Rattus rattus</i> Brown rat	-	-	-	-	-	-	1	-
	<i>Castor fiber</i> Beaver	-	-	-	-	-	-	1	-

Part 1

Fig. 7. Wild mammals and birds recorded in the different Hittite sites of Turkey (number of finds). 1 = Early Kingdom; 2 = Great Empire.

Birds	Species	Boğazköy (1)	Boğazköy (2)	Büyükkaya (2)	Kusaklı Temple I (1+2)	Kusaklı West Slope (1+2)	Korucutepe (1)	Korucutepe (2)	Kaman Kalehöyük
	<i>Bubulcus ibis</i> Cattle egret	-	-	-	1	-	-	-	-
	<i>Anser anser</i> Greylag goose	-	-	-	1	-	-	-	-
	<i>Anser albifrons</i> White-fronted goose	-	-	-	-	-	-	2	-
	<i>Tadorna ferruginea</i> Ruddy shelduck	-	1	-	-	-	-	-	-
	<i>Anas platyrhynchos</i> Mallard	-	-	-	1	1	-	4	2
	<i>Anas strepera</i> Gadwall	-	-	-	3	-	-	-	-
	<i>Anas penelope</i> Wigeon	-	-	-	1	-	-	-	2
	<i>Anas clypeata</i> Shoveler	-	1	-	-	-	-	-	-
	<i>Anas crecca</i> Teal	-	2	-	-	-	1	-	-
	<i>Anas sp.</i>	-	5	-	-	-	-	-	-
	<i>Aythya nyroca</i> Ferrugineous duck	-	1	-	-	-	-	-	-
	<i>Aquila sp.</i>	-	1	-	-	-	-	1	-
	<i>Hieraetus pennatus</i> Booted eagle	-	-	-	-	1	-	-	-
	<i>Aegypius monachus</i> Black vulture	-	-	1	-	-	-	-	-
	<i>Gyps fulvus</i> Griffon vulture	-	-	-	2	1	-	-	-
	<i>Neophron percnopterus</i> Egyptian vulture	-	-	-	-	-	-	2	1
	<i>Alectoris chukar</i> Chukar	-	1	1	-	1	1	16	-
	<i>Francolinus francolinus</i> Francolin	-	-	-	1	-	-	-	-
	<i>Tetraogallus caspius</i> Caspian snowcock	-	-	-	-	1	-	-	-
	<i>Coturnix coturnix</i> Quail	-	-	-	-	-	-	1	-
	<i>Grus grus</i> Crane	-	2	-	1	1	1	6	-
	<i>Otis tarda</i> Great bustard	-	-	-	1	1	1	-	-
	<i>Otis tetrax</i> Little bustard	-	-	-	-	-	-	1	-
	<i>Columba livia</i> Rock dove	-	-	-	1	-	-	-	-
	<i>Columba palumbus</i> Woodpigeon	-	-	-	-	-	-	2	-
	<i>Bubo bubo</i> Eagle owl	-	-	-	-	-	-	1	-
	<i>Corvus sp.</i> Crows	-	-	-	-	-	-	3	-

BIBLIOGRAPHY

- Akurgal, E. 1995: *Hatti ve Hittit Uygarlıkları* (Istanbul).
- Arnhold, S. forthcoming: *Das hethische Gebäude E auf der Akropolis von Kuşaklı-Sarissa* (Kuşaklı-Sarissa 4) (Rahden, Westphalia).
- Bittel, K. 1983: *Hattuscha. Hauptstadt der Hethiter. Geschichte und Kultur einer alt-orientalischen Großmacht* (Cologne).
- Boehmer, R.M. 1983: *Die Reliefkeramik von Boğazköy. Grabungskampagnen 1906-1912, 1931-1939, 1952-1978* (Boğazköy-Hattuša XIII) (Berlin).
- Bottema, S., Woldring, H. and Aytuğ, B. 1995: 'Late Quaternary Vegetation History of Northern Turkey'. *Palaeohistoria* 35/36, 13-72.
- Boessneck, J. and von den Driesch, A. 1975: 'Tierknochenfunde vom Korucutepe bei Elâzığ in Ostanatolien'. In van Loon, M.N. (ed.), *Korucutepe: Final Report on the Excavations of the Universities of Chicago, California (Los Angeles) and Amsterdam in the Keban Reservoir, Eastern Anatolia, 1968-1970*, vol. 1 (Amsterdam/Oxford/New York), 1-220.
- Brouwer, W. 1972: *Handbuch des speziellen Pflanzenbaues*, vol. I (Berlin/Hamburg).
- del Monte, G.F. and Tischler, J. 1978: *Die Orts- und Gewässernamen der hethitischen Texte* (Répertoire géographique des textes cunéiformes 6) (TAVO Beiheft B7) (Wiesbaden).
- Dörfler, W., Neef, R. and Pasternak, R. 2000: 'Untersuchungen zur Umweltgeschichte und Agrarökonomie im Einzugsbereich hethitischer Städte'. *MDOG* 132, 367-80.
- Durnford, S.B.P. and Akeroyd, J.R. 2005: 'Anatolian *marshantha* and the many Uses of Fennel'. *AS* 55, 1-13.
- Emre, K. and Çınaroğlu, A. 1993: 'A Group of Metal Hittite Vessels from Kink-Kastamonu'. In Mellink, M., Porada, E. and Özgüç, T. (eds.), *Aspects of Art and Iconography: Anatolia and its Neighbors. Studies in Honor of Nimet Özgüç* (Ankara), 675-713.
- Friedrich, J. 1959: *Die Hethitischen Gesetze. Transkription, Übersetzung, Sprachliche Erläuterung und Vollständiges Wörterbuch* (Documenta et Monumenta Orientis Antiqui 7) (Leiden).
- Frohne, D. and Pfänder, H.-J. 1997: *Giftpflanzen. Ein Handbuch für Apotheker, Ärzte, Toxikologen und Biologen*, 4th ed. (Stuttgart).
- Güterbock, H.G. 1961: 'Critical Reviews'. *JCS* 15, 62-78.
- Haas, V. and Wegner, I. 1995: 'Stadtverfluchung in den Texten aus Boğazköy sowie die hurritischen Termini für "Oberstadt", "Unterstadt" und "Herd"'. In Finkbeiner, U. (ed.), *Beiträge zur Kulturgeschichte Vorderasiens. Festschrift für Rainer Michael Boehmer* (Mainz), 187-94.
- Herre, W. and Röhrs, M. 1958: 'Die Tierreste aus den Hethitergräbern von Osmankayası'. In Bittel, K., Herre, W., Otten, H., Röhrs, M. and Schaeuble, J., *Die hethitischen Grabfunde von Osmankayası*. (Boğazköy-Hattuša II) (Berlin), 60-80.
- Hillman, G.C. 1984: 'The interpretation of archaeological plant remains: The application of ethnographic models from Turkey'. In van Zeist, W. and Casparie, W.A. (eds.), *Plants and Ancient Man* (Rotterdam), 1-42.
- Hoffner, H.A. 1974: *Alimenta Hethaeorum. Food Production in Hittite Asia Minor* (New Haven).
- Hongo, H. 1996: *Patterns of Animal Husbandry in Central Anatolia from the second Millennium BC through the Middle Ages: Faunal Remains from Kaman-Kalehöyük, Turkey* (Dissertation, Harvard University).

- Hopf, M. 1992: 'Plant remains from Boğazköy, Turkey'. *Review of Palaeobotany and Palynology* 73, 99-104.
- Körber-Grohne, U. 1988: *Nutzpflanzen in Deutschland. Kulturgeschichte und Biologie* (Stuttgart).
- Müller-Karpe, A. 1995: 'Untersuchungen in Kuşaklı 1992-94'. *MDOG* 127, 5-36.
- 1996a: 'Untersuchungen in Kuşaklı 1995'. *MDOG* 128, 69-94.
- 1996b: 'Kuşaklı – Ausgrabungen in einer hethitischen Stadt'. *AntWelt* 27.4, 305-12.
- 1997: 'Untersuchungen in Kuşaklı 1996'. *MDOG* 129, 103-42.
- 1998: 'Untersuchungen in Kuşaklı 1997'. *MDOG* 130, 93-174.
- 1999: 'Untersuchungen in Kuşaklı 1998'. *MDOG* 131, 57-113.
- 2000: 'Untersuchungen in Kuşaklı 1999'. *MDOG* 132, 311-53.
- 2001: 'Untersuchungen in Kuşaklı 2000'. *MDOG* 133, 225-50.
- 2002a: 'Untersuchungen in Kuşaklı 2001'. *MDOG* 134, 331-51.
- 2002b: 'Kuşaklı-Sarissa. Kultort im oberen Land'. In *Die Hethiter und ihr Reich. Das Volk der 1000 Götter* (Bonn), 178-89.
- 2004a: 'Untersuchungen in Kuşaklı 2002'. *MDOG* 136, 103-35.
- 2004b: 'Untersuchungen in Kuşaklı 2003'. *MDOG* 136, 137-72.
- 2006: 'Untersuchungen in Kuşaklı 2004 und 2005'. *MDOG* 138, 15-42.
- Müller-Karpe, H. 1980: *Handbuch der Vorgeschichte*, vol. 4, pt 3 (Munich).
- Neef, R. 2001: 'Getreide im Silokomplex an der Poternenmauer (Boğazköy) – erste Aussagen zur Landwirtschaft'. In Seeher, J., 'Die Ausgrabungen in Boğazköy-Ḫattuša 2000'. *AA*, 335-41.
- Nesbitt, M. 1993: 'Ancient Crop Husbandry at Kaman-Kalehöyük: 1991 Archaeological Report'. In H.I.H. Prince Takihito Mikasa (ed.), *Essays on Anatolian Archaeology (BMECCJ 7)* (Wiesbaden), 75-97.
- Neu, E. 1974: *Der Anitta-Text (StBot 18)* (Wiesbaden).
- Neve, P. 1993: *Ḫattuša: Stadt der Götter und Tempel. Neue Ausgrabungen in der Hauptstadt der Hethiter* (Mainz).
- Pasternak, R. 1991: 'Hafer aus dem mittelalterlichen Schleswig'. *Offa* 48, 363-80.
- 2001: 'Von der Gefahr, Unkraut zu ernten – Archäobotanische Großrestanalyse am Beispiel des hethiterzeitlichen Fundortes Kuşaklı'. In ... *nicht nur Kraut und Rüben – Archäobotanik im Ruhrgebiet* (Essen), 65-88.
- Rätsch, C. 1998: *Enzyklopädie der psychoaktiven Pflanzen* (Stuttgart).
- Riemschneider, K.K. 1958: 'Die hethitischen Landschenkungsurkunden'. *MIO* 6, 338-78.
- Roberts, N. and Wright, H.E. jr 1993: 'Vegetational, Lake-Level, and Climatic History of the Near East and Southwest Asia'. In Wright, H.E., Kutzbach, J.E., Webb III, T., Ruddiman, W.F., Street-Perrott, F.A. and Bartlein, P.J. (eds.), *Global Climates since the Last Glacial Maximum* (Minneapolis), 194-220.
- Röllig, W. 1992: 'Die Anfänge der Braukunst in Zweistromland'. In Ruprechtsberger, E.M. (ed.), *Bier im Altertum* (Linzer Archäologische Forschungen, Sonderheft VIII) (Linz), 9-14.
- Seeher, J. 1997: 'Die Ausgrabungen in Boğazköy-Ḫattuša 1996'. *AA*, 317-41.
- 1998: 'Die Ausgrabungen in Boğazköy-Ḫattuša 1997'. *AA*, 215-41.
- 1999: 'Die Ausgrabungen in Boğazköy-Ḫattuša 1998 und ein neuer topographischer Plan des Stadtgeländes'. *AA*, 317-44.
- 2000a: 'Die Ausgrabungen in Boğazköy-Ḫattuša 1999'. *AA*, 355-76.

- 2000b: 'Getreidelagerung in unterirdischen Großspeichern: Zur Methode und ihrer Anwendung im 2. Jahrtausend v. Chr. am Beispiel der Befunde in Hattuša'. *SMEA* 42.2, 261-301.
- 2001: 'Die Ausgrabungen in Boğazköy-Hattuša 2000'. *AA*, 333-62.
- 2006: 'Der althethitische Getreidensilokomplex'. In *Ergebnisse der Grabungen an den Ostteichen und am mittleren Büyükkale-Nordwesthang in den Jahren 1996-2000* (Boğazköy-Berichte 8) (Mainz), 45-84.
- Siegelová, J. 2001: 'Der Regionalpalast in der Verwaltung des hethitischen Staates'. *AoF* 28.2, 193-208.
- Sturtevant, E.H. and Bechtel, G. 1935: *A Hittite Chrestomathy* (Philadelphia).
- Ünal, A. 1989: 'Drawings, Graffiti and Squiggles on the Hittite Tablets – Art in Scribal Circles'. In Emre, K., Hrouda, B., Mellink, M. and Özgüç, N. (eds.), *Anatolia and the Ancient Near East. Studies in Honor of Tahsin Özgüç* (Ankara), 505-13.
- van Zeist, W. and Bottema, S. 1991: *Late Quaternary Vegetation of the Near East*. (TAVO Beiheft 18) (Wiesbaden).
- von den Driesch, A. forthcoming: *Tierknochenabfall aus einem Gebäude in der hethitischen Stadt Kuşaklı-Sarissa/Anatolien* (Kuşaklı-Sarissa 4) (Rahden, Westphalia).
- von den Driesch, A. and Boessneck, J. 1981: *Reste von Haus- und Jagdtieren aus der Unterstadt von Boğazköy-Hattuša (Grabungen 1958-1977)* (Boğazköy-Hattuša XI) (Berlin).
- von den Driesch, A. and Pöllath, N. 2004: *Vor- und frühgeschichtliche Nutztierhaltung und Jagd auf Büyükkaya in Boğazköy-Hattuša, Zentralanatolien* (Boğazköy-Berichte 7) (Mainz).
- von den Driesch, A. and Vagedes, K. 1997: 'Archäozoologische Untersuchungen in Kuşaklı'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 1996'. *MDOG* 129, 103, 122-34.
- Wilhelm, G. 1997: *Keilschrifttexte aus Gebäude A* (Kuşaklı-Sarissa 1.1) (Rahden, Westphalia).

CHAPTER 6

HITTITE MILITARY AND WARFARE

Jürgen LORENZ and Ingo SCHRAKAMP

Abstract

The present chapter deals with Hittite military and warfare. A brief review of Hittite history shows what important a role the military played in the history of Central Anatolia and beyond during the 2nd millennium BC. The reader will be introduced to the sources, which contain both archaeological remains and cuneiform texts. Constituting the major parts of the army, chariot troops and foot soldiers will be dealt with in detail, describing arms, equipment and organisation. Though we do not have descriptions of how a battle was fought, a synthesis of cuneiform documents, material remains and pictorial evidence allow us to reconstruct a good deal of Late Bronze Age warfare.

INTRODUCTION

Hittite history is mainly a history of wars. Since the oldest known Indo-European record, the so-called Anitta text, deals with military confrontations, it demonstrates instructively the importance of military expansion during the process of state formation in 2nd-millennium BC Anatolia.¹ The expansion under the Old Hittite kings as well would not have been possible without a well-developed military. Doubtless Muršili's I conquest of Babylon marks the climax of the military undertakings of the Old Hittite kings. We cannot say for certain how far the military was involved in dynastic disputes and rebellions in the Middle Hittite period, but the lack of written evidence for major military operations clearly contributes to the fact that intra-Hittite disputes weakened the political power of Ḫatti. After this ill-documented period, Šuppiluliuma I laid the foundations for the Hittite empire. For this period sources are more varied and extensive than hitherto. During the reign of Muwatalli II, the empire extended from western Anatolia to upper Mesopotamia, including major parts

¹ CTH 1; Neu 1974. CTH numbers given in the notes refer to a revised, digital version of Laroche, *Catalogue des textes hittites*: <http://www.asor.org/HITTITE/CTHHP.html>.

of Syria and the Levant. Rule over such wide a territory was only possible by means of accurate administration and the striking force of an effective army.

SOURCES

The annalistic literature of the kings provides the most important written source dating to the Old Hittite period: The annals of Ḫattušili I,² his instruction to his successor Muṣili I, and the Telipinu³ text contain information describing the military activities of the Old Hittite kings. In addition, a few passages of the Hittite Laws offer further information.⁴ The Middle Hittite Maṣat letters testify to the function and the functioning of a Hittite border city;⁵ the so-called Kikkuli text accurately deals with the training of chariot horses and thus is of major relevance for our topic.⁶ In comparison to the scanty documentation of the Old and Middle Hittite periods, written sources from the Empire period are much more extensive. Here the annals of Šuppiluliuma I and Muṣili II⁷ provide us with detailed information about the composition of the army and its arms, manpower, numbers and recruiting. Treaties with vassal kings increase our knowledge of the composition and human resources of the Hittite army. Instructions to different officers and the so-called military oaths are helpful in describing the nature of military service and organisation.⁸ Some administrative documents provide further detail information concerning armament and equipment.⁹

Hittite depictions of arms and army are supplemented by numerous representations of Hittite infantry and chariot troops on Egyptian reliefs and wall-paintings dating from the reigns of Seti I and Ramesses II (Figs. 5-6). Although archaeological remains of weapons and equipment from Hittite sites as well as

² CTH 4; KBo 10.1 (Akkadian), Houwink ten Cate 1983-84; KBo 10.2 (Hittite), Kempinski 1983, 22-33.

³ CTH 6, see Sommer and Falkenstein 1938; on CTH 19, see Hoffmann 1984.

⁴ CTH 291-292, edited by Friedrich 1971; more recently, see Roth 1997.

⁵ Alp 1991, 4-6; Klinger 1995, 83-86; most recently de Martino 2005, 307-08 with a few additions to the corpus.

⁶ CTH 284, see n. 73.

⁷ For those texts designated as CTH 40 and CTH 61, see Güterbock 1956; Goetze 1933.

⁸ CTH 255, 259; on 261, see von Schuler 1957. For an overview of the officers, see Beal 1992, 297-527; Beal 1995, 546-47; Pecchioli-Daddi 1982. For the military oaths, see Oettinger 1976.

⁹ Instructive examples are the inventories filed under CTH 242: KBo 18.170 (+) 170a and KUB 42.43 (see Kořak 1982, 110-11; Siegelová 1986, 482-88); KUB 42.81 (Kořak 1982, 98-100; Haas 1989, 32-33; Siegelová 1986, 179).

from neighbouring regions are rare, they complement the written and pictorial evidence (Figs. 1-3, 7).

MOTIVES AND STRATEGY

The Hittites went to war for many reasons. In the north, Kaškan tribes¹⁰ had to be prevented from raiding the border regions, to the west and south-west lay the rebellious and reluctant Arzawa states, and to the south-east expeditions had to be undertaken in order to subdue rebellious vassals where – in upper Mesopotamia and northern Syria – the Hittite kings came in contact and conflict with the interests of the major powers Assyria, Egypt and Mitanni. The main targets of Hittite expansion were the regions to the south-east where the most profitable vassal kingdoms lay, whereas Hittite strategy in the west and the north focused on defensive measures.

The conquest of vassal states was formally confirmed by vassal treaties wherein tributes were fixed. This provided a constant influx of goods for Hatti. Since the Hittite kings regularly listed the amount of plunder, spoils and tribute, its economic role can hardly be overestimated. In addition to cattle and movables, deportees provided an important source of manpower that was needed for agricultural and temple service, sometimes military service as well. Deportation of large parts of the population of subdued territories was a common way of diminishing the potential for rebellion in the long term.¹¹

Defence and protection of Hittite territory against external attack was another vital issue. Hittite warfare to the north and north-west was primarily defensive in nature and purpose, serving to defend and protect Hittite territory. To this end, the Hittite kings established border garrisons, especially in northern Anatolia, to protect this region from raids by Kaškan tribes.

Another instrument of Hittite policy was diplomacy. By avoiding armed confrontation with another major power by means of diplomatic agreement, the king was enabled to concentrate more military strike-power at other points. Diplomatic relations and agreements with Aḫhiyawa and Babylonia should be regarded as the result of strategic considerations, as should the treaty between the Hittite Great King and the Pharaoh of Egypt. Assyria was in fact the only

¹⁰ For a recent survey of sources mentioning Kaškans, see Klinger 2005.

¹¹ For prisoners of war in the ancient Near East, see Bryce 2002, 104-07; Ünal 1983, 164-65 n. 6; Goetze 1933, 217-20; Gelb 1973; Klengel 1983, 241-46; Faivre 1991; Joannès 2001, 227-30, 686-88.

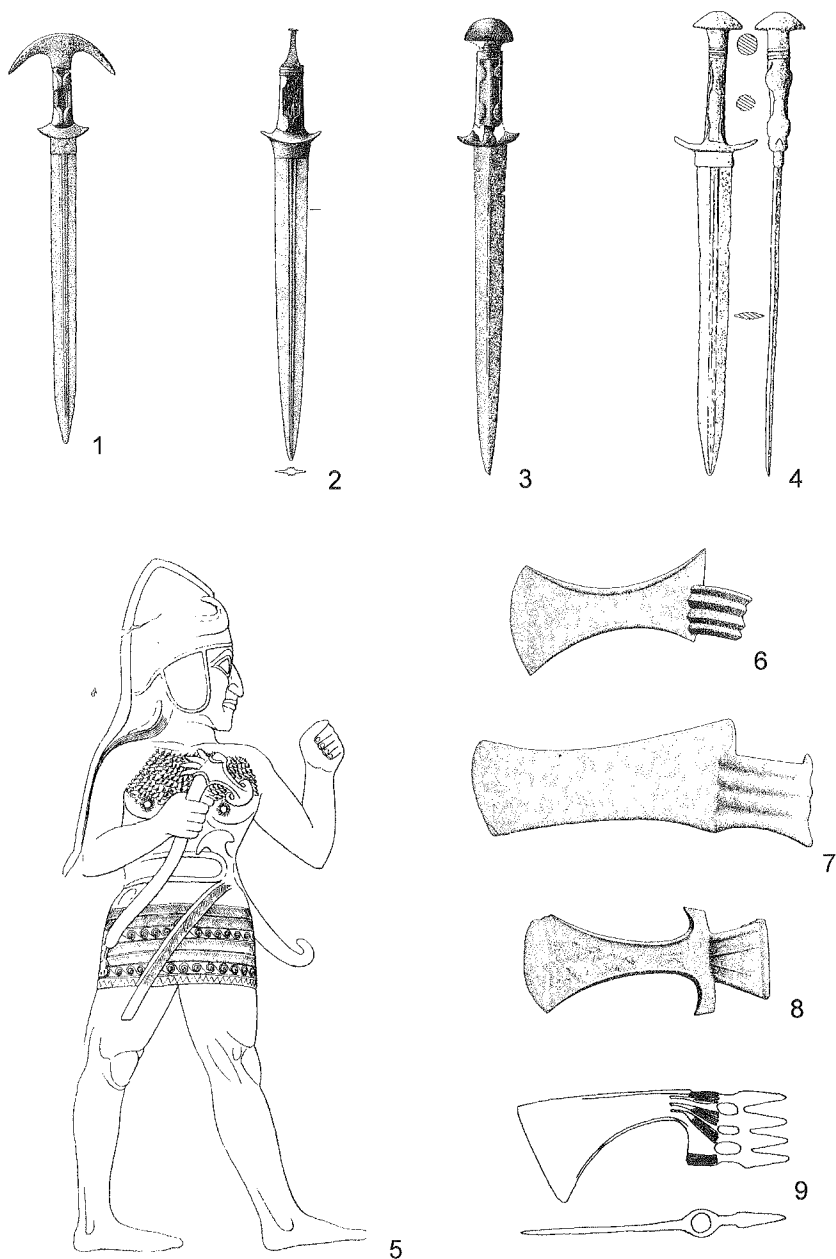


Fig. 1. Swords and axes: Examples of swords used by the Hittites: Tell Atchana (1), Ugarit (2), Tell es-Sa'idiye (3), Şarköy (4); (5) Warrior God from the King's Gate, Boğazköy, with a helmet, sword and axe; (6-9) Axes found at Kültepe (6), Sivas (7) and (9), and Boğazköy (8) (after Geiger 1993 [1-4]; H. Müller-Karpe 1980, Taf. 170 B 3 [5]; Erkanal 1977, Taf. 5.59, 60, 54 [6-8]; Ökse and Toy 1992, 147 fig. 6 [9]).

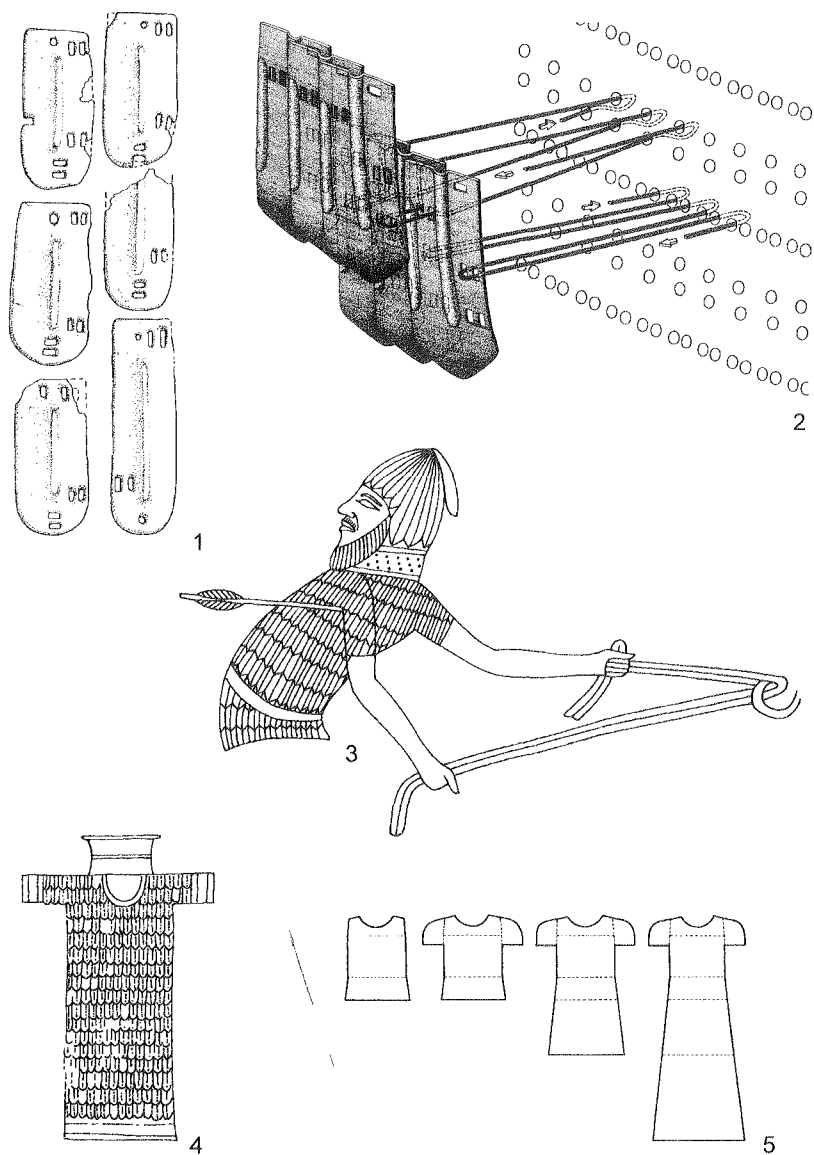


Fig. 2. Scale armour as worn by chariot warriors:

- (1) Typical bronze armour-scales from Boğazköy (after Macqueen 1986, 63, fig. 33);
- (2) Reconstruction of armour-scales from Kamid el-Loz (Lebanon) sewn on a textile or leather undercoat (after Ventzke 1983, 98, fig. 48);
- (3) Chariot warrior protected by helmet and scale armour on a wall-painting from Thebes (Egypt) (after Ventzke 1983, 97, fig. 46);
- (4) Long scale armour coat depicted on an Egyptian wall-painting from Thebes (after Ventzke 1983, 97, fig. 46);
- (5) Different types of scale armour according to their size and number of scales (after Ventzke 1983, 98, fig. 49).

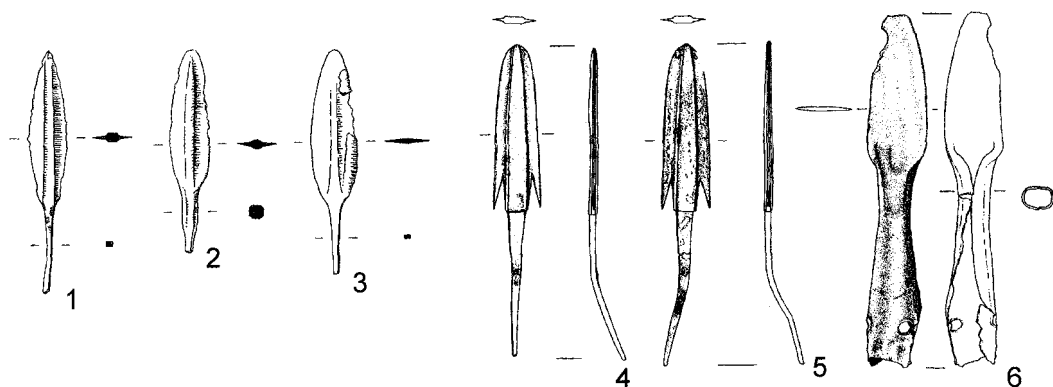


Fig. 3. Arrowheads and a lance head:

(1-3) Elliptical arrowheads from Boğazköy (after Boehmer 1972, Taf. 30, nos. 876-878);

(4-5) Barbed arrowheads from Kuşaklı (after A. Müller-Karpe 2001, 229, Abb. 4.4-5);

(6) Lance head from Kuşaklı, presumably for close combat (after A. Müller-Karpe 2001, 229, Abb. 4.6).

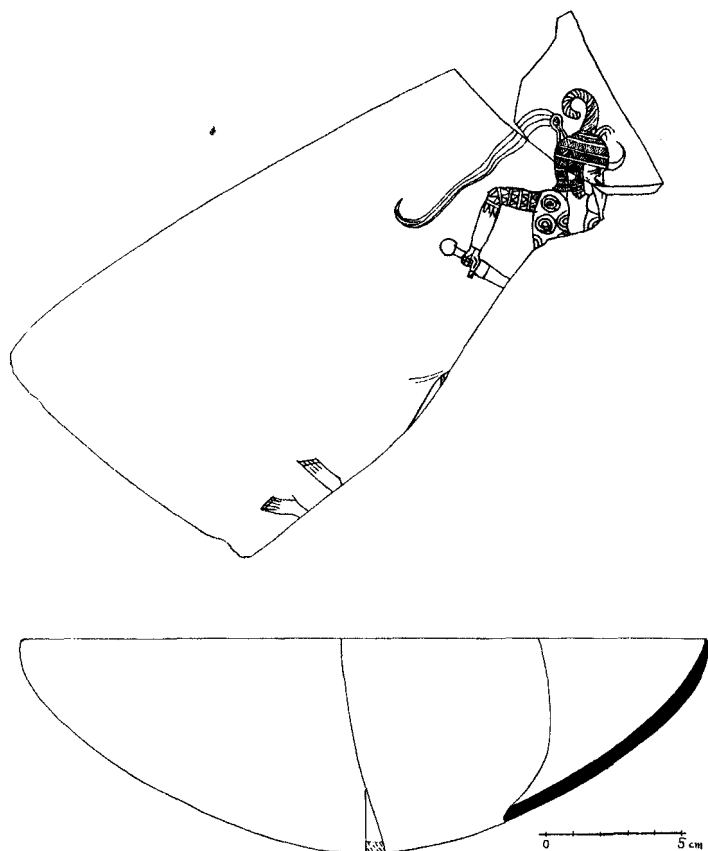


Fig. 4. Sherds of a Hittite bowl with incised depiction of a battle scene with a 'foreign' warrior wearing a helmet and a short sword. The lower part of the scene shows a pair of feet which belonged presumably to a slain warrior (after Bittel 1976, figs. 1 and 3).

major power that had not established peaceful diplomatic agreements with Ḫatti at the time of its downfall.¹²

HITTITE ROYAL IDEOLOGY AND WAR

The king bore the epithet UR.SAG ‘hero’ and was supreme commander of the army. Hittite monumental art portrayed the king regularly carrying lance, sword and bow, but battles are never depicted.¹³ Written records of the kings’ military exploits provide no evidence of the kings revelling in destruction and cruelty. Only Ḫattušili I called himself a lion which kills his prey without mercy and boasted that he had captured and yoked up the king of Ḫaḫḫu.¹⁴ In contrast, Muršili II represents himself as a merciful king, although we can be certain that Muršili’s motivation was political pragmatism rather than humanistic ideals.¹⁵

RELIGION AND MAGIC IN WAR

Fighting external enemies was seen as a natural activity. A considerable number of gods of the Hittite pantheon were clearly associated with warfare, and when the king went to war the gods granted divine protection.¹⁶ The stereotypical phrase ‘...[in the battle], the gods went before me...’ appears regularly in the annals of the kings. Divine intervention is often mentioned in the texts, where sudden fog or the successful approach of the Hittite army, hidden by heavy rainfall, thus undiscovered by enemy forces, are understood as acts of god.¹⁷

Since the final outcome of a campaign depended largely on divine will, the Hittite king tried to explore the chances of military success by means of oracular questions addressed to the gods.¹⁸ Some apparently reflected strategic considerations, such as efforts to avoid entanglement in armed confrontation

¹² On diplomatic matters and relations of the Hittites, see recently Bryce 2002, 245, 329-30; Klengel 2002; Quack 2002; Edel 1997; Murnane 1990, 31-38; Cancik-Kirschbaum 2002; Niemeier 2002.

¹³ Bryce 2002, 100. For depictions of the king as a warrior, see the contribution by Bryce in this volume, Fig 1.

¹⁴ KBo 10.1 obv. 34-35; translation by Kempinski 1983, 17-19; Bryce 2002, 100. KBo 10.2 rev. III 41-42; Ünal 1983, 167 n. 15.

¹⁵ CTH 61; Bryce 2002, 99; Goetze 1933, 70-73. On Hittite attitudes to war, see Masson 1999.

¹⁶ Bryce 2002, 100. For Hittite deities related to war, see Haas 1994, 363-72.

¹⁷ Goetze 1963, 126-27.

¹⁸ Goetze 1957, 129 n. 1.

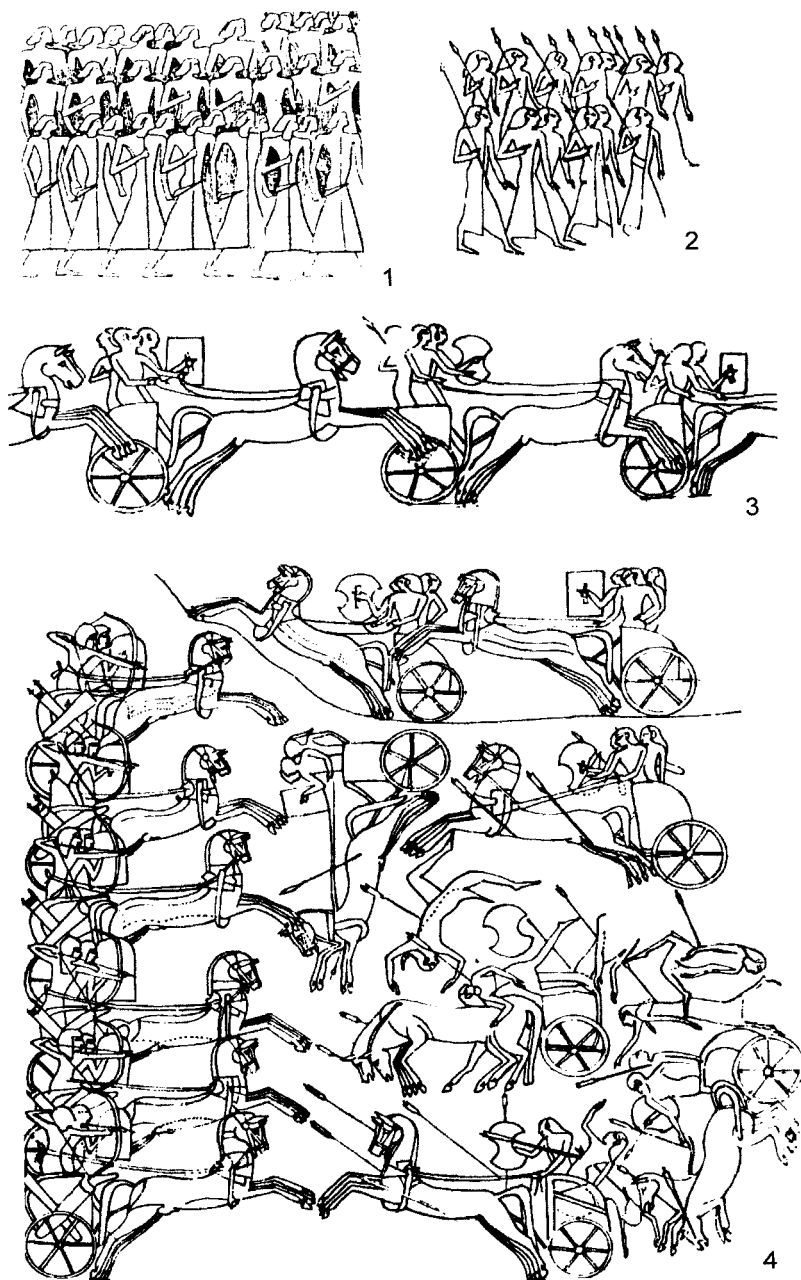


Fig. 5. Scenes from Egyptian reliefs depicting the Battle of Qadeš from Luxor (1) and Abu Simbel (2-4):

- (1) Hittite soldiers armed with swords; (2) Hittite soldiers armed with lances; (3) Hittite chariots in advance; (4) Egyptian chariotry (left) charges Hittite chariot troops (right) (all after H. Müller-Karpe 1980, Taf. 59-61, 27).

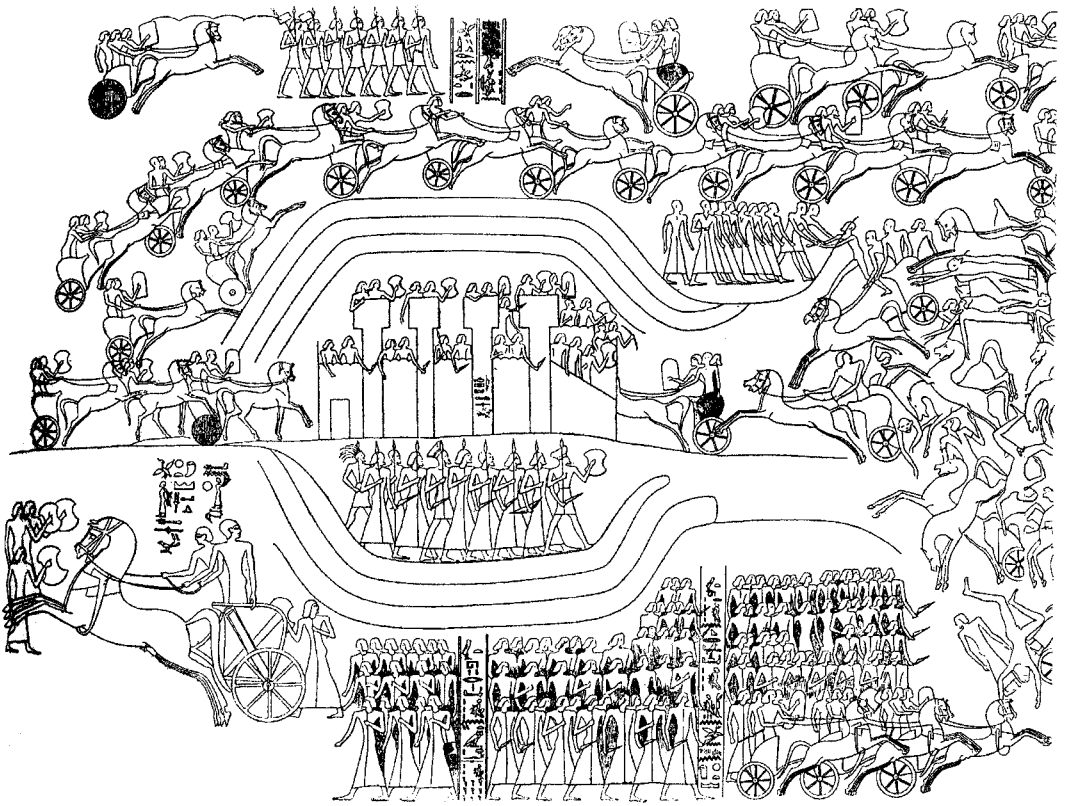


Fig. 6. Hittite infantry and chariot troops in front of the city of Qadeš as portrayed on Egyptian reliefs from Luxor (after H. Müller-Karpe 1980, Taf. 58).

on multiple fronts.¹⁹ Muršili II tells in his annals that he continued an operation after promising omens had been observed.²⁰ It is notable that vassal kings, to prevent their defecting, were not allowed to perform oracles when obliged by vassal treaties to join forces with the king.²¹

War was regarded as a matter of law that was sanctioned by the gods. Thus, if a vassal defected from the Hittite king, the subsequent campaign served to restore order and was legitimated by the gods.²²

¹⁹ Beal 1995, 550.

²⁰ KBo 4.4 obv. II 49-57; Goetze 1933, 118-19; Ünal 1973, 29-30.

²¹ Otten 1961, 382.

²² The interpretation of military conflicts as a lawsuit does not only apply to Hittite warfare, see Houwink ten Cate 1984, 72.

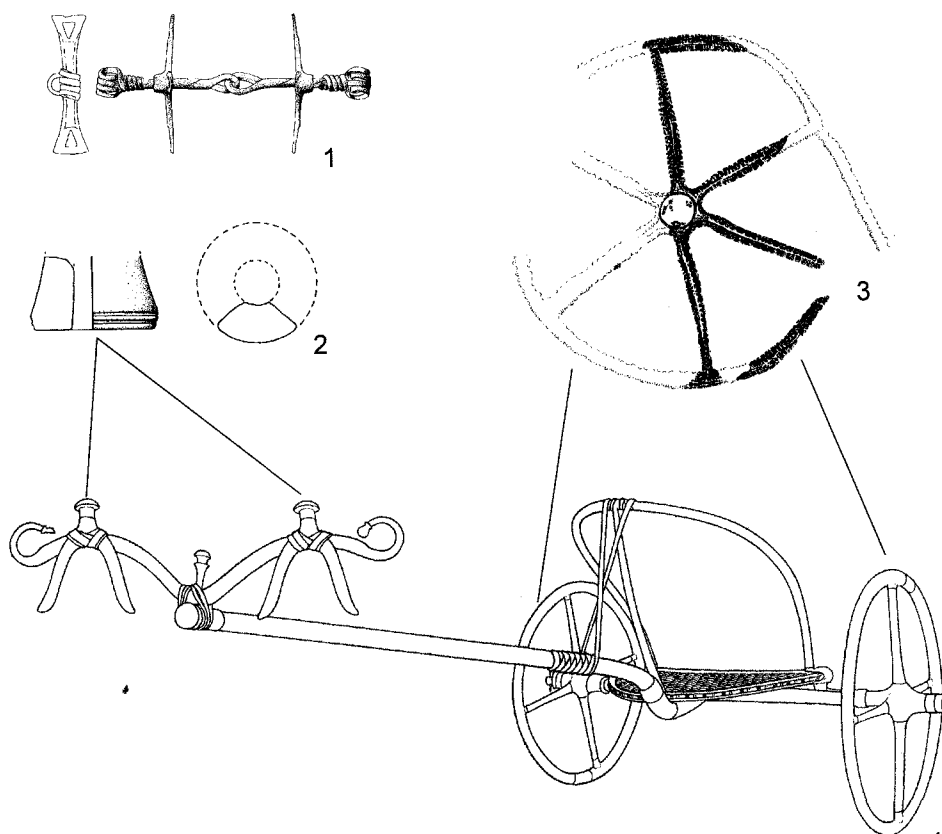


Fig. 7. (1) Horse-bits from Şarkışla (after H. Müller-Karpe 1980, Taf. 159 C1);
 (2) Yoke peg or knob from Kuşaklı (after A. Müller-Karpe 1998, 136, Abb. 27);
 (3) Spoked wheel from Lidar Höyük (after Littauer, Crouwel and Hauptmann 1991, Abb. 3);
 (4) Reconstruction of a typical Late Bronze Age chariot
 (after Littauer and Crouwel 1979, Taf. 42).

Rituals were another means by which the Hittites tried to influence the course of war. Examples of rituals performed before battle may include incantations of gods at the enemy border.²³ The Uršu story mentions a ritual accomplished to weaken enemy weaponry and warriors and to turn them into women.²⁴ Others could be performed in order to keep the army from retreating during

²³ CTH 422, translated by Goetze 1955, 354-55; von Schuler 1965, 168-73; CTH 424.

²⁴ Haas 1994, 364-65. A similar passage is attested in the first military oath (see Oettinger 1976, 11-13).

battle.²⁵ If the army lost a fight it had to undergo a ritual of purification.²⁶ References to bows, arrows and chariots in rituals and curse formulae may perhaps reflect the important role and military value of these weapons.²⁷ These samples testify to the Hittites' endeavour to influence war and demonstrate the integration of warfare into the Hittite world and religion.²⁸

COMPOSITION OF THE ARMY

The king was the supreme commander of the army and usually led his troops on the battlefield.²⁹ It is not known whether the king fought in the first rank with his troops. If the king, because of cultic or military obligations, was not available to lead an army, the crown prince was entitled to command an army on his own.³⁰ The next highest officers after king and crown prince were the remaining sons of the king, the chief of the royal bodyguard and the chief of the wine stewards.³¹ Usually, these high-ranking officers were members of the royal family.³² A variety of middle- and low-ranking officers, their exact function unclear in many cases, are attested in the written sources. They were in charge of leading the troops of the Hittite army during battle: the chariot troops and the infantry.³³

INFANTRY

The infantry formed the major part (some 90%) of the Hittite army.³⁴ The terminology used to describe troops in written records does not provide useful evidence in respect of their arms and equipment. The stereotypical phrase 'foot

²⁵ Beal 1995, 552. For treatments, see CTH 426.

²⁶ Haas 1988, 248-49; Beal 1995, 552.

²⁷ See, for example, Riemschneider 1962, 113-14 with n. 57; Beal 1992, 148 with n. 540; a curse formula in a Kaškean treaty (von Schuler 1965, 109-17) mentions arrows to be turned against the oath-breaker (Oettinger 1976, 79).

²⁸ For more samples, see Polvani 2002. For war rituals in the Ancient Near East in general, see Prechel 2003; Elat 1982. See also the references given by Goetze 1957, 129 nn. 1-5.

²⁹ See the contribution by Bryce in this volume, pp. 86-87.

³⁰ ^{LU}*tuhukanti*-, Beal 1992, 319-20; Goetze 1933, 162-63.

³¹ Beal 1992, 320-27.

³² On the commanders of the bodyguard (GAL *MEŠEDI*; GAL *GEŠTIN*), see Beal 1992, 327-57. See also the contribution by Bryce in this volume, p. 94.

³³ For a brief description of the Hittite army, see Beal 1995, 548-49; 1992, 521-27; Bryce 2002, 111. The terms designating 'troops' and 'army' written with the word signs *ÉRIN*^{MEŠ}, *KARAŠ* or Hittite *tuzzi*-, see Beal 1992, 5, 22-23, 28-29. Chariot troops were called *ANŠE.KUR.RA*^{MEŠ/H1A}, older texts refer to the chariots using the terms ^{GIS}*GIGIR*^{H1A}, *ÉRIN*^{MEŠ GIS} *GIGIR*^{H2LA} and *ŠIMDI ANŠE.KUR.RA*^{H1A}; see Starke 1995, 120 n. 244; Beal 1992 141-47.

³⁴ Bryce 2002, 111.

soldiers and chariots' differentiates the infantry from the chariot corps but does not give further detail. More illuminating are the terms designating the soldiers of the royal bodyguard that stem from words meaning 'lance'. Troops called 'men of the lance' had the lowest rank within the bodyguard. These were presumably regular soldiers.³⁵ Because sources are rare, even some terms designating types of soldier remain obscure.

Hittite administrative documents contain a large number of terms for weapons and equipment. Some records mention them in such large numbers that the state production and issue of military equipment seems possible, but the written sources are not sufficient to verify this assumption.³⁶

A survey of pictorial and archaeological evidence provides a synopsis of common military equipment and weapons. It must be noted that identification of archaeological types with terms of the cuneiform tradition as well as attribution of weapons to ethnic groups remains in most cases a problem. Reliefs depicting the king as warrior show the Hittite king carrying weapons that were common in the Late Bronze Age, the sword, the lance, a bow and arrows. The swords on the reliefs are characterised by a crescent-shaped pommel. The best example of such a short-bladed sword was found in Tell Atchana (Fig. 1.1).³⁷ The depiction of the sword of the figure at the King's Gate corresponds to this type (Fig. 1.5), but it must be noted that swords of similar shape were not restricted to the Hittites. A detail of a Qadeš relief of Ramesses II shows Hittite infantry equipped only with short swords of the type mentioned above (Fig. 5.1).³⁸ Besides the sword, the relief at the King's Gate shows an axe carried by the warrior figure (Fig. 1.5), but the type attested here might actually be a ritual or cultic weapon. Nevertheless, axes appear to have been weapons of war (Fig. 1.6-9).³⁹ A sword with a votive inscription mentioning the Great King Tuthalya, was found in Hattuša as part of spoils taken in western Anatolia.⁴⁰

A relief of the Great King Tuthalya, identified as posthumously deified by the hieroglyphic inscription, depicts the king carrying a lance. Lance-heads

³⁵ For the guards designated LÚ^{MEŠ} GIŠŠUKUR and the MEŠEDI-guard, see Beal 1992, 229-30. The instructions for the Royal Bodyguard (CTH 262) have been published by Güterbock and van den Hout 1991; cf. Beal 1992, 214. On the guards named LÚ^{MEŠ} (GIŠ)ŠUKUR (GUŠKIN/ZABAR/DUGUD) 'men of the (golden/bronze/heavy) lance', see Beal 1992, 227-31.

³⁶ See Beal 1992, 137-39.

³⁷ For Anatolian swords, see A. Müller-Karpe 1994; Geiger 1993, 215 Abb. 2b (Tell Atchana); and the contribution by Siegelová and Tsumoto in this volume, p. 292.

³⁸ See Yadin 1963, 105.

³⁹ For axes from Anatolia see Erkanal 1977; Ökse and Toy 1992; and Siegelová and Tsumoto in this volume, pp. 292-95.

⁴⁰ *Die Hethiter und ihr Reich* 2002, 355, no. 153.

have been found at many sites (Fig. 3.6)⁴¹ and lances were a very common weapon, as illustrated by a detail of a Qadeš relief representing a unit of Hittite infantry equipped with them (Fig. 5.2).⁴²

The bow is regularly depicted as the weapon of the king.⁴³ Written sources do not allow us to determine whether the Hittite infantry contained separate units of archers. Archers as a distinct type of troops are explicitly mentioned only once.⁴⁴ It is possible that troops levied by the king contained soldiers who were trained with bow and arrow, and it is possible that we cannot identify units of archers in the written sources because they were not explicitly designated as such, but only named 'troops'.⁴⁵ It has to be pointed out here that armies of neighbouring states maintained units of infantry archers.⁴⁶ Maintenance of archers seems to have been important; the use of the powerful composite bow in particular required several years of training and experience.⁴⁷ On the basis of well-preserved original composite bows from Egyptian tombs, reconstructions have demonstrated their superior penetration and range compared with the simple bow.⁴⁸ Furthermore, the possibility of keeping the bow braced for a long time without loss of strength allowed archers to be ready to fight at any time, thus predestining the composite bow to be a weapon of war.⁴⁹

Administrative records mentioning large quantities of bows and arrows, as well as the constant appearance of bows and arrows in war rituals, demonstrate the prominent role played by the bow in Late Bronze Age warfare. Thus, it seems very likely that the Hittite army contained units of archers within the corps of infantry. Inventories from Ḫattuša provide us with valuable details: one list mentions some axes, arrows and bows, and again, an amount of

⁴¹ *Die Hethiter und ihr Reich* 2002, no. 125; depiction of a god carrying a lance: no. 127, p. 332, no. 61; see Neve 1993, 76, Abb. 214 for a relief of Great King Šuppiluliuma armed with bow and lance. On lances from Boğazköy, see Boehmer 1972, 75; for an example from Kuşaklı, see A. Müller-Karpe 2001, 228-29, Abb. 4. See also Siegelová and Tsumoto in this volume, p. 292.

⁴² Relief from Abu Simbel, see Yadin 1963, 238.

⁴³ Relief of Great King Šuppiluliuma from Boğazköy; see Neve 1993, 76, Abb. 214; rock carving from Karabel, see *Die Hethiter und ihr Reich* 2002, 221, Abb. 3.

⁴⁴ A brief description of archers (LÚMEŠ GISBAN) is provided by Beal 1992, 72, 201; 1995, 548; on archers in Hittite laws, see Friedrich 1971, 34-35; Roth 1997, 225; Houwink ten Cate 1984, 56. For more references, see Taracha 2004, 458-59.

⁴⁵ See Mayer 1995, 469; Korfmann 1972, 17-20.

⁴⁶ According to texts from, for example, Ugarit und Nuzi; see Vita 1995, 149-53, 181; Kendall 1974, 260-61.

⁴⁷ CTH 16a; Beal 1992, 65 n. 232; and compare the translation of §54 of the Old Hittite laws by Houwink ten Cate 1984. See also Taracha 2004, 459 §4.

⁴⁸ Moorey 1986, 208-11; Miller, McEwen and Bergmann 1986, 182-87. For the manufacture of composite bows as documented in Middle Assyrian administrative texts, see Jakob 2003, 469-72; Frahm 2002, 75-80.

⁴⁹ Miller, McEwen and Bergmann 1986, 185.

200 bows. Another inventory records '43 bows decorated with gold' and some quivers and arrows, and the text states '4 Hittite quivers, 930 arrows therein [these may not be usual quivers but rather containers for storing arrows in the arsenal], 4 Hurrian quivers, 127 arrows therein, 4 Kaškan quivers, 87 arrows'.⁵⁰ Excavations in Kuşaklı-Sarissa have shown an interesting ensemble of arrowheads. In the entrance area of a building (Building C) some arrowheads have been discovered, all of which point towards the inside of the building. These arrowheads evidently testify to fighting that took place within this building when it was captured (Fig. 3.1-5).⁵¹

The written sources do not allow us to draw any conclusion concerning the use of the sling in the Hittite army, whereas it seems likely that the enemies of the Hittites made use of this weapon. Slingshot documents that the sling has been used as a weapon of war since the Neolithic period, thus it would be surprising if the Hittites had not used it. A late Hittite stele from Tell Halaf depicts a single soldier using a sling.⁵²

The mace and the sickle sword do not appear to have been 'Hittite' weapons of war, since both are shown merely in a cultic context: the Yazılıkaya reliefs, for example, depict Hittite gods carrying sickle swords.

THE CHARIOT TROOPS

Around 1650 BC the light, horse-drawn chariot with spoked wheels was present in most parts of the Near East.⁵³ During the Late Bronze Age, the kings of Assyria, Babylonia, Egypt and Mitanni held the chariot in great esteem. Already

⁵⁰ CTH 242; KUB 42.81 7'-9'; Košak 1982, 98-100; Haas 1989, 32-33; Taracha 2004, 458-59 with more references.

⁵¹ A. Müller-Karpe 1999b, 65-66, Abb. 10. See also Siegelova and Tsumoto in this volume, p. 292.

⁵² According to Beal (1992, 522) the sling was used by the enemies of the Hittites, but the question of its use by the Hittites is problematic. For the sling, see Korfmann 1972, 4-16; 1986; Mayer 1995, 466-70. Korfmann (1986, 134 n. 11) mentions an orthostat from the Kapara palace at Tell Halaf dating to the 9th or 8th centuries BC showing a slinger. Perhaps, the use of the sling is attested at Ugarit: According to Dietrich and Loretz (1983, 217-18) an inventory from the palace of Ugarit includes, besides bows, arrows and further chariot equipment, 1000 sling bullets and 2 slings. For a more recent interpretation of the terms in question as designations for a type of arrow and shield, see Vita 1995, 51, 64-65, 70; Heltzer 1998, 140; del Olmo Lete and Sanmartín 2003, 700. A possible reference to the use of slings by Kaškans is provided by a historical fragment according to which Kaškans attacked Hittite troops with bows and arrows and stones which might refer to slingstones (KBo 16.36 rev. III 7-9; see Taracha 2004, 459 §3; Riemschneider 1962, 112-14; Ünal 1984, 75 with n. 16).

⁵³ For the dating of the introduction of the light chariot, see Littauer and Crouwel 1996; Moorey 1986, 197. For horses, see the recent contribution by van den Hout 2004. On the light, horse-drawn chariot in the Near East during the 2nd millennium, see most recently Richter 2004.

Ḫattušili I led larger contingents of chariots into battle.⁵⁴ The composite bow was the weapon of the chariot warriors.⁵⁵ One or more quivers were attached to the chariot box; if needed, the crew could carry quivers on the body. The capacity of quivers is documented in various administrative records, showing that the average was about 25-35 arrows.⁵⁶ An Egyptian papyrus tells us that an Egyptian chariot carried 80 arrows, equalling the contents of two or three quivers (Fig. 5.4 left)⁵⁷ – additional loads of quivers carried on the body were surely not included in this calculation. An administrative text from Ḫattuša mentions a quantity of 17,000 arrows along with additional chariot parts and equipment. Similar records from Nuzi, mentioning thousands of arrows, easily spring to mind.⁵⁸ A Hittite literary text describes training and manoeuvres for chariot crews under the supervision of two officers.⁵⁹ This text supposes that training with a bow and arrow, as well as the training for chariot horses, was significant to the maintenance of the Hittite army.

Ramesses II dedicated a series of monuments to the Battle of Qadeš that provide the major pictorial sources for the Hittite army (Figs. 5.3-4; 6). The reliefs show Hittite chariots carrying a crew of three: driver, warrior and a third man whose task was to protect the crew with a shield.⁶⁰ The shields are either rectangular or of the figure-of-eight type. Excavations in Pi-Ramesses have uncovered a workshop in which arrowheads, lance-heads and moulds for

⁵⁴ Beal 1992, 142 n. 511; Kempinski 1983, 46-49; Mayer and Mayer-Opificius 1994, 326; Beal 1992, 277-96; Moorey 1986; Houwink ten Cate 1984, 59 n. 25.

⁵⁵ On the bow in Hittite texts, see most recently Taracha 2004. Taracha (2004, 459 §3) states that in Hittite sources the bow is mentioned in most cases, in connection with chariotry. On the manufacture of bows in the ancient Near East, see the references given in Postgate 2004, 457; Taracha 2004, 458 §1; Haas 1989, 34-36. On typology and terminology of bows, see most recently Collon 2004, 461-62.

⁵⁶ See, for example, Kendall 1974, 212.

⁵⁷ Mayer and Mayer-Opificius 1994 (327 n. 36) cite Papyrus Koller 1.4.

⁵⁸ KBo 18.170 (+) 170a; on this text, see Košak 1982, 110-11; Siegelová 1986, 482-88. According to Taracha (2004, 459) this document provides evidence of an inventory of an armoury or store place (*cf.*, for example, Kendall 1974, 254). See also the remarks of Beal 1992, 138-39. For similar references from Nuzi, see Kendall 1974, 255-56; Zaccagnini 1977, 35 n. 77 with references. The Nuzi text HSS 14, 264 provides a description of the typical chariot equipment (see Zaccagnini 1977, 31). For finds of Hittite arrowheads, see Boehmer 1972, 104-106; and the contribution by Siegelová and Tsumoto in this volume, p. 292.

⁵⁹ KBo 3.34 II 21-35: Beal 1992, 535-36. On training in general, see Beal 1992, 127-29. The so-called 'Court Chronicle' (CTH 8) mentions a competition of archers (see Klinger 2001, 64). For further references, see Taracha 2004, 459.

⁶⁰ For the crew of the chariot, see Beal 1992, 153-62; for the driver, *išmeriyaš išḫa-*; ŠA KUS⁴KIR₄.TAB.ANŠE / ^{LÚ}APPATI and KARTAPPU, and the chariot fighter ^{LÚ}KUŠ₇, see Beal 1992, 162-78; *cf.* Beal 1992, 178-84. It may be noted that Hittite records describing images of gods frequently mention shields as part the armament among other weapons. For references, see von Brandenstein 1943, 6-7, 18-19, 64-65, Taf. 1.

hammering shields of the type mentioned above and of trapezoid shape have been discovered.⁶¹ According to the excavator, E.B. Pusch, this workshop was part of a chariot garrison, which may have included Hittite troops. This garrison may have provided a bodyguard for the Hittite princess after she was married to the Pharaoh.⁶² Representations of Hittite chariots on reliefs dating from the reign of Seti I show the Hittite chariot carrying only two crewmen; the job of the shield-bearer was assigned to the driver in this case.⁶³

Some scholars postulate the lance as a weapon of Hittite chariot warriors, since the Qadeš reliefs portray the Hittite king in his chariot armed with a bow and arrow whereas the ordinary Hittite chariots are equipped with lances (Figs. 5.3-4; 6). But this representation is the result of a taboo according to which the enemies of the Pharaoh must not be depicted as too powerful.⁶⁴ Moreover, practical considerations show that lances were not the weapons of Hittite chariot warriors – fighting with a lance from a chariot has been shown to be impossible for many reasons.⁶⁵ In addition, all textual sources provide ample evidence to show that the Hittite chariot warriors carried bows and arrows.

The chariot crews were protected by long scale armour, which could cover the whole of the body and the upper parts of the arms and legs (Fig. 2.3-5).⁶⁶ This expensive armour consisted of a garment of linen and leather with overlapping scales of bronze sewn onto it (Fig. 2.1-2). Scales of bronze were found in many different Near Eastern sites.⁶⁷ Written evidence from Nuzi and finds of armour-scales allow us to reconstruct scale armour of various types ranging in weight from 9.5 to 27 kg (Fig. 2.5).⁶⁸ According to reconstructions based on finds from Kamid el-Loz, the most expensive scale armour covering the whole of the body (Fig. 2.5 right) weighed up to 27 kg and may have contained up to 4000 scales of different sizes and shapes.⁶⁹ Horses also appear to have been protected by scale armour.⁷⁰

⁶¹ See Pusch 1990, 103-04, 106.

⁶² Pusch 1990, 108; Klengel 2002, 54 with n. 12.

⁶³ Beal 1992, 148 n. 540.

⁶⁴ Starke 1995, 50; Mayer and Mayer-Opificius 1994, 324 n. 22, 344 n. 101.

⁶⁵ See Littauer and Crouwel 1983; Beal 1992, 149 n. 544.

⁶⁶ On the introduction of scale armour in the ancient Near East, see Deszö 2004, 319-20.

⁶⁷ For finds of armour-scales in the ancient Near East, see Deszö 2004, 319-21; for textual references, Deszö 2004, 321-22.

⁶⁸ See Beal 1992, 150 n. 546; Boehmer 1972, 102-04; Moorey 1986, 210-11. Ventzke (1983, 94-100) gives a detailed reconstruction of scale armour from Kamid el-Loz. For comparable finds, see Deszö 2004, 321-22. The weight of bronze scale armour from Nuzi could range from 17 to 25 kg (see Kendall 1979, 277; 1981, 212-13; Zaccagnini 1979, 26-27). According to Nuzi texts, different types of armour usually contained 700-1200 scales.

⁶⁹ Deszö 2004, 322; Ventzke 1983, 100.

⁷⁰ See Beal 1992, 152-53; Kendall 1974, 264.

The Qadeš reliefs do not provide any evidence about Hittite helmets, nor are any Hittite helmets known from excavations so far, but written sources demonstrate that helmets were part of the equipment of chariot crews. A first impression of the shape and design of Hittite helmets can be derived from the relief at the King's Gate in Hattuša, which shows a high conical helmet with cheek-pieces, neck-guard and a plumed crest (Fig. 1.5). Another helmet, which might not be of Hittite origin however, is illustrated on a graffito on a sherd from Boğazköy (Fig. 4). The fragment shows remains of a second figure, presumably a slain warrior (as K. Bittel has assumed), and is, so far, the only known battle scene in Hittite art.⁷¹ The most detailed information about Late Bronze Age helmets is provided by a group of texts from Nuzi mentioning up to 15 distinct types or subtypes of helmet, made of leather, textiles and bronze armour-scales. The weight of the helmets depended on the number of scales that had been used. Textual evidence allows the reconstructions of helmets consisting of 120-200 scales with a weight of about 2-3.5 kg (similar to Fig. 2.3).⁷²

Both of the chariot crew – driver as well as archer – and the chariot horses had to be well trained in order to guarantee their effectiveness in battle. The Kikkuli text illustrates the importance of horse training and chariot warfare in the Late Bronze Age. Two further Hittite horse training manuals are known, though badly preserved.⁷³

Material evidence for chariots is rare and includes, for example, finds of bronze horse-bits (Fig. 7.1), a few examples of what may have been pegs once applied to the chariot yoke (Fig. 7.2), and the traces of a spoked wheel from Lidar Höyük (Fig. 7.3).⁷⁴ There is no evidence for armed cavalry in the Hittite army, though both pictorial evidence and some Hittite texts indicate that messengers on horseback may have formed part of Late Bronze Age armies.⁷⁵

⁷¹ For Hittite helmets, see Calmeyer 1972, 313-14; for the helmet depicted at the King's Gate, see Borchardt 1972, 101-03; for the helmet shown on the ceramic fragment, see Bittel 1976. Furthermore, Deszö (2004, 321) considers this graffito to be one of the earliest depictions of scale armour and helmet.

⁷² For helmets in the Nuzi tablets, see Kendall 1981, especially 201, 211-13. On the matter of chariotry and horses in Nuzi, see Zaccagnini 1977.

⁷³ Lately, the Kikkuli text (CTH 284) has been subject to discussion; for a recent summary, see Raulwing and Meier 2004; Raulwing 2002, xiv d; 1999, 353, 354 n. 15; Starke 1995, 3. See also the references given by van den Hout 2004, 486-87.

⁷⁴ For the spoked wheel from Lidar Höyük, see Littauer and Crouwel in Raulwing 2002, 314-26; Littauer, Crouwel and Hauptmann 1991. On chariot yoke pegs in general, see Littauer and Crouwel 1979, 85; plus bibliographical references given by A. Müller-Karpe 1999 135-37. H. Müller-Karpe 1980, Taf. 159 C1-2 provides a depiction of the horse bits mentioned above.

⁷⁵ The term *PITHALLU* seems to designate horse-riding messengers; compare the hippologic considerations by Littauer and Crouwel 1979, 98; Goetze 1957, 124 n. 7 mentions KUB 21.38 obv. 18; Bryce 2002, 111; Yadin 1963, 113; Beal 1992, 190-91. For the term *PITHALLU*, see Beal 1992, 190-91.

RECRUITMENT AND MAINTENANCE

Large-scale military operations generally demanded an effective striking force. The Hittite king had various methods at his disposal for levying and recruiting troops. In addition to the standing army,⁷⁶ contingents of vassal troops, levied by vassal kings obliged to join the Hittite king's army,⁷⁷ and contingents of short-term conscripts, troops raised in the case of immediate need, may have been common parts of the Hittite army. In times of dire need, the Hittite army may have included mercenaries, too.

Campaigning was restricted to the summer months, as civilians performing military service had to be available for the autumn harvest.⁷⁸ Furthermore, the Anatolian winter prohibited any major military operations – snow and ice made all communication routes impassable. Although Muršili II commemorates the building of military camps before the first snow, long-term campaigns that lasted longer than summer were exceptional.

In some cases, administrative records from Ḫattuša shed light on the recruitment, maintenance and composition of the army. The troops of the standing army – only free citizens were allowed to perform military service here – were stationed in barracks in Ḫattuša when not on campaign,⁷⁹ or were garrisoned in other parts of the empire.

It is not entirely clear how these troops were recruited, maintained and supplied. Land tenure was certain a well-known method. People designated as 'men of the weapon' performed military service in the standing army and received land as a payment.⁸⁰ Using this method of supplying his standing army troops, the king could obtain better-trained troops than by levying civilians. Due to lexical problems it is uncertain if and how far this method was practised in the time of the Hittite empire. The provinces of the Hittite empire provided another type of soldier. In the Hittite texts, these contingents were designated according to their homeland and fought under the command of their own officers. It is quite possible that such contingents were part of the standing army. Furthermore, the Hittite king could raise levies from civilians. In accordance to their capabilities, these troops would serve in infantry units, as archers or in the chariot corps, or they might be obliged to undertake building activities. For the duration of the campaign the king provisioned these troops, and

⁷⁶ UKU.UŠ, *šarikuwa*–; Beal 1992, 37. For the composition of the army, see Beal 1992, 139–40; for the size of the army see and its units, see Beal 1992, 277–96.

⁷⁷ On the treatment of vassals, see Bryce in this volume, pp. 95–96.

⁷⁸ Beal 1992, 413–25; Bryce 2002, 102.

⁷⁹ Beal 1992, 39, 41–42 nn. 163–164.

⁸⁰ Beal 1992, 55–56.

when the campaign was concluded, the levies returned to their civil life. If necessary, the Hittite king could call vassals and allies to support him with reinforcements. The type and size of vassal contingents were fixed by treaties, and defection from military service was seen as an act of open rebellion. In exchange for major payments of gold, vassals could get an exemption from this obligation.

When the standing army, the vassal troops, levies and allies joined forces at the rallying point, the Hittite king mustered his army and took command. The size of such an army might have been remarkable, but the sources do not provide us with exact numbers. A Hittite campaign army may have consisted of an estimated total of 10,000 men and 1000 chariots. The Hittite army at Qadeš is supposed to have been the largest Hittite army ever led into battle. Egyptian sources compute a total of 3500 Hittite chariots and 37,000 infantry. Without doubt this would have been the maximum striking force the Hittite king was able to raise.⁸¹

THE HITTITE ARMY IN BATTLE

The written sources do not give any information about the conduct of battles.⁸² The annals of the kings consist entirely of highly formalised and stereotypical phraseology, which do not allow us to derive information useful for the reconstruction of a typical battle in open terrain. We do not have real descriptions of the localities of major battles. Only single pieces of information, scattered through the corpus of Hittite literature, reveal evidence of particular aspects of warfare. Thus, attempts to reconstruct battle tactics must remain partially speculative.

The chariot was the supreme weapon of the Late Bronze Age. The speed of the horses, the remarkable firepower and long range of the composite bow and the defensive capabilities of scale armour made the chariot the elite weapon. Chariots seem to have been used in larger units that harassed the enemy with a shower of arrows fired at long range. Perhaps these chariot units approached the enemy and, when in range, travelled parallel to the enemy lines, showering them with arrows. The combat speed of chariots has been estimated at 16 km/h, and experimental archaeology postulates a maximum speed of 30-35 km/h on

⁸¹ Numbers according to Beal 1992, 277-96, especially 291-92 and 296; 1995, 547. In his annals (KBo 4. 4 II 3), Muršili II mentions an enemy force of 10,000 troops and 700 chariots (Goetze 1933, 122).

⁸² On this general problem, see Riemschneider 1962, 110-11; Ünal 1983, 166-167; Mayer and Mayer-Opificius 1994, 322-23; Joannès 2001, 120-21; also Haas 1999.

the basis of reconstructions of ancient Near Eastern chariots. The effective range of a composite bow may well have been 200 m. Bearing in mind that a chariot archer might have had 120 or 150 arrows at his disposal, and that he fired them at an estimated frequency of 6 to 10 arrows a minute, one can easily imagine what devastating effect the charge of a unit of 100 chariots would have had on a unit of simple infantry.⁸³ The designation of a pair of officers in Hittite records, namely as ‘Overseer of the 1000 Chariot Warriors of the Left / Right’, gives a hint at chariot battle tactics, putting the chariot units on the left and the right flanks of the army, whose centre consisted of infantry. Thus, it seems very likely that destroying the enemy chariots (and archers) was the main objective.

The infantry, although its role in open battle may have been subordinate, was essential nevertheless to the Late Bronze Age army. Scholars have recently come to view the infantry as having an entirely subordinate role in Late Bronze Age warfare, noting the fact that, in contrast to the numerous ‘chariot texts’ preserved from the ancient Near East, there are no comparable texts for the infantry.⁸⁴ However, a more likely explanation is that the chariot units required full-scale organisation, administration and to be supplied for the entire year, which, clearly, was not the case with levies, allies and other types of infantry. Foot soldiers would have played a more vital role when a battle took place in a region lacking the open terrain necessary for chariot units.

SIEGE WARFARE

Siege warfare is already attested in Old Hittite written records. If the enemy withdrew into a fortified city, the Hittites might decide to besiege it. Hittite administrative records are silent on siege warfare and related matters, but a literary text called ‘The Siege of Uršu’, dating from the reign of Ḫattušili I, provides us with detailed information about it and testifies to knowledge of various siege techniques common in 2nd-millennium warfare.⁸⁵ The Uršu text mentions reconnaissance of the territory surrounding the enemy city by officers and goes on to describe the use of siege towers, earthen siege ramps and

⁸³ On chariot speed, see Mayer 1995, 330; Herold 2004 a, 138-39; on firing speed of archers, see Mayer and Mayer-Opificius 1994, 334 n. 62; Miller, McEwen and Bergmann 1986, 188 (10 arrows a minute).

⁸⁴ Goetze 1957, 124; Gurney 1961, 106; Drews 1993, 135, 138; Mayer and Mayer-Opificius 1994, 332; Littauer and Crouwel 1996, 936; Yadin 1963, 111-12 for differing views on this topic.

⁸⁵ CTH 7 = KBo 1.11; recently Beckman 1995; Bryce 2002, 116 n. 29. For a discussion of this text, see Beal 1992, 144 n. 517; Bryce 1998, 97-98; Ünal 1983, 167 n. 25; Beal 1992, 278.

battering rams.⁸⁶ According to the Mesopotamian cuneiform tradition, such methods may have constituted the common repertoire of siege warfare in the Near East. The undermining of fortified structures and the use of storm-ladders were surely techniques in common use as well.

The annals of the Hittite kings regularly refer to the burning of enemy cities, and archaeological horizons of destruction levels have been discovered at several sites. But it remains impossible to equate the destruction of cities mentioned in the cuneiform sources with the archaeological evidence.⁸⁷ The last means to force a besieged city to surrender was to surround it in order to cut off supplies. It is very likely that starvation proved to be a powerful weapon of siege warfare, but long lasting sieges consumed too many resources of men and materials. Sieges outlasting the campaign season between spring and autumn were, of course, exceptions. In these cases, a small contingent maintained the siege during the winter,⁸⁸ while the major part of the army returned home to Ḫattuša.

TROOPS IN A BORDER CITY

During excavations at Maşat Höyük, a Middle Hittite border city, a corpus of approximately 100 letters was recovered, some of which form part of the correspondence kept between the Hittite king and the commander of the outpost, the 'Lord of the watchtower' (Akkadian *BĒL MADGALTI*; Hittite *auriyaš išḫa-*). The documents witness to the presence of the complete range of troops – chariot, infantry, scouts (written LÚ^{MEŠ} NÍ.ZU / ÉRIN^{MEŠ} NÍ.ZU) dispatched for reconnaissance, and messengers who served for communication between the king and the commander of the city. The function of the Maşat garrison seems mainly to have consisted of reconnaissance of enemy movements, in order to enable the Hittite king to react quickly in case of a major threat. The texts, some of which mention skirmishes, clearly confirm the function of Maşat as a defensive outpost in the northern border region designed to secure the Kaşkan frontier. This assumption is corroborated by copies of the so-called instructions for the *BĒL MADGALTI* from Ḫattuša.⁸⁹ Thus, it seems very likely that Maşat was only one of a series of border garrisons.

⁸⁶ Houwink ten Cate 1984, 52 Rs. 5; Goetze 1933, 190-91.

⁸⁷ Ünal 1983, 177.

⁸⁸ Attested in the Anitta text, the Uršu story and the annals of Muršili II. See Neu 1974, 14 rev. 70-71; Goetze 1933, 63; Beal 1995, 552.

⁸⁹ See nn. 6 and 9. The instructions for the 'Lord of the watchtower' have been treated by von Schuler 1957.

HITTITE CITY FORTIFICATIONS

Every campaign drawing the mass of troops from the homeland meant a substantial weakening of Ḫattuša's defensive capabilities. The Hittites relied on different means to maintain an effective defence of their homeland. In case of major campaigns, additional troops were levied from the civil population and might be assigned to guard duties or to serve in garrisons or other places. The last but not least line of Hittite defence was the strong fortification of cities, already referred to in Old Hittite times, best documented by the fortification system of the capital, Ḫattuša.

The fortification walls were built in a casemate system with a width of up to 8 m. Two parallel walls were connected by diagonal walls, and the compartments thus constructed were filled with rubble. Towers protruded at regular intervals from the outer face of the walls. The walls are always situated on earthen ramparts, which provided protection against battering rams. As usual in Hittite architecture, the foundations and the lower parts of the walls were made of stone, whereas the upper parts consisted of a timber-framed structure of mud-brick. The superstructure of the walls can be reconstructed with a high degree of certainty thanks to the discovery of vessels showing fortification walls with battlements and towers.⁹⁰

The gates were always flanked by towers. The Lion's Gate in Ḫattuša was approached via a ramp, which ran parallel to the wall to the right, thus exposing the unshielded side of potential attackers to fire from the wall. Every gate could be closed on the outer and inner side by heavy wooden doors, which could be bolted with copper bars.

A peculiarity of Hittite fortifications is the so-called postern, a narrow tunnel of up to 50 m in length and 3–4 m in width and height that led through the earthen ramparts on which the fortification stood. According to one theory these posterns may have served as sally ports, enabling the defenders to make quick sorties. The length and the narrowness of the posterns made them easily defensible against intruders who, on the other hand, were exposed to fire from the fortification walls during their approach.

⁹⁰ On Hittite fortifications, see most recently Schirmer 2002, 206–07; Seeher 2002, 159; Mazar 1995, 1531–32; for an extensive description, see Naumann 1971. The fragments of decorated vessels referred to above have been dealt with by Parzinger and Sanz 1992, Taf. 60–62; Naumann 1971, 255, 310–11, Abb. 327, 328; *Die Hethiter und ihr Reich* 2002, 342 no. 99; Neve 1993, 28–29 Abb. 68; A. Müller-Karpe 1999a, Abb. 6; most recently V. Müller-Karpe 2003. See also the contribution by Mielke in this volume.

CONCLUSION

Archaeological remains and written sources offer a rich documentation for study of military issues. In a world where war was more normal than peace, war and warfare were integrated in religion, mythology and society. The Hittite war machine played an important and sometimes predominant role in Near Eastern history and, due to its strike-power, had nothing to fear from armed confrontation with any other major power of the Late Bronze Age. Nevertheless, the Hittite army was unable to avert collapse. Thus, it is even more surprising that both material and written sources do not shed any light on the events that led to the empire's decline.

BIBLIOGRAPHY

- Alp, S. 1991: *Hethitische Briefe aus Maşat-Höyük (TTKY VI.35)* (Ankara).
- Beal, R.H. 1992: *The Organisation of the Hittite Military (THeth 20)* (Heidelberg).
- 1995: 'Hittite Military Organization'. In Sasson, J. (ed.), *Civilizations of the Ancient Near East* (New York), 545-54.
- 2002a: 'I reparti e le armi dell'esercito ittita'. In Guidotto and Pecchioli Daddi 2002, 93-108.
- 2002b: 'Le strutture militari ittite di attacco e di difesa'. In Guidotto and Pecchioli Daddi 2002, 109-21.
- Beckman, G. 1995: 'The Siege of Uršu Text (CTH 7) and Old Hittite Historiography'. *JCS* 47, 23-34.
- 1999: *Hittite Diplomatic Texts* (Atlanta).
- Bittel, K. 1976: 'Tonschale mit Ritzzeichnung von Boğazköy'. *RA*, 9-14.
- Boehmer, R.M. 1972: *Die Kleinfunde von Boğazköy-Ḫattuša aus den Grabungskampagnen 1931-1939 und 1952-1969* (Boğazköy-Ḫattuša VII = WDOG 87) (Berlin).
- Borchhardt, J. 1972: *Homerische Helme. Helmformen der Ägäis in ihren Beziehungen zu orientalischen Helmen in der Bronze- und frühen Eisenzeit* (Mainz).
- Bryce, T.R. 1998: *The Kingdom of the Hittites* (Oxford).
- 2002: *Life and Society in the Hittite World* (Oxford).
- Calmeyer, P. 1972: s.v. 'Helm. B. Archäologisch'. *RLAss* IV, 313-17.
- Cancik-Kirschbaum, E. 2002: 'Konfrontation und Koexistenz. Ḫattusa und die nord-mesopotamischen Staaten Mittanni und Assyrien'. In *Die Hethiter und ihr Reich* 2002, 282-87.
- Collon, D. 2004: s.v. 'Pfeil und Bogen. B. In der Ikonographie'. *RLAss* X, 461-69.
- de Martino, S. 2005: 'Hittite Letters from the Time of Tuḫaliya I / II, Arnuwanda I and Tuḫaliya III'. *AoF* 32, 291-321.
- del Olmo Lete, G. and Sanmartín, J. 2003: *A Dictionary of the Ugaritic Language in the Alphabetic Tradition*, vol. 2 (*HdO* 67) (Leiden).
- Deszö, T. 2004: s.v. 'Panzer'. *RLAss* X, 319-23.
- Die Hethiter und ihr Reich* 2002: *Die Hethiter und ihr Reich. Das Volk der 1000 Götter* (Bonn).

- Dietrich, M. and Loretz, O. 1983: 'Dokumente aus Alalach und Ugarit'. In Kaiser, O. (ed.), *Rechts- und Wirtschaftsurkunden, historisch-chronologische Texte* (Texte aus der Umwelt des Alten Testaments I.3) (Gütersloh), 210-19.
- Drews, R. 1993: *The End of Bronze Age. Changes in Warfare and the Catastrophe ca. 1200 B.C.* (Princeton).
- Edel, E. 1997: *Der Vertrag zwischen Ramses II. von Ägypten und Hattušili III. von Hatti* (WVDOG 95) (Berlin).
- Elat, M. 1982: 'Mesopotamische Kriegeritualen'. *BiblOr* 39, 5-25.
- Erkanal, H. 1977: *Die Äxte und Beile des 2. Jahrtausends in Zentralanatolien* (PBF IX. 8) (Munich).
- Faivre, X. 1991: 'Déportation et Butin'. *Les Dossiers d'Archéologie* 160, 70-75.
- Fansa, M. and Burmeister, S. (eds.) 2004: *Rad und Wagen. Der Ursprung einer Innovation. Wagen im Vorderen Orient und Europa* (Archäologische Mitteilungen aus Nordwestdeutschland, Beiheft 40) (Oldenburg).
- Frahm, E. 2002: 'Assur 2001: Die Schriftfunde'. *MDOG* 134, 47-86.
- Friedrich, J. 1971: *Die Hethitischen Gesetze. Transkription, Übersetzung, Sprachliche Erläuterung und Vollständiges Wörterbuch* (Documenta et Monumenta Orientis Antiqui 7), 2nd ed. (Leiden).
- Gelb, I.J. 1973: 'Prisoners of War in Early Mesopotamia'. *JNES* 32, 70-98.
- Geiger, A. 1993: 'Ein Schwertheft aus dem Tempelviertel der Oberstadt von Boğazköy-Hattuša'. *IstMitt* 43, 213-17.
- Goetze, A. 1933: *Die Annalen des Muršiliš* (Leipzig).
- 1955: 'Hittite Rituals, Incantations, and Description of Festivals'. In Pritchard, J.B. (ed.), *Ancient Near Eastern Texts Relating to the Old Testament*, 2nd ed. (Princeton), 351-60.
- 1957: *Kulturgeschichte Kleinasien* (Handbuch der Altertumswissenschaft III.2), 2nd ed. (Munich).
- 1963: 'Warfare in Asia Minor'. *Iraq* 25, 124-30.
- Guidotto, M. C. and Pecchioli Daddi, F. (eds.) 2002: *La battaglia di Qadesh. Ramesse II contro gli Ittiti per la conquista della Siria* (Florence).
- Gurney, O.R. 1964: *The Hittites* (London).
- Güterbock, H.G. 1956: 'The Deeds of Suppiluliuma as told by his Son, Muršili II'. *JCS* 10, 41-68, 75-99, 107-130.
- Güterbock, H.G. and van den Hout, T.P.J. 1991: *The Hittite Instruction for the Royal Bodyguard* (Assyriological Studies 24) (Chicago).
- Haas, V. 1988: s.v. 'Magie und Zauberei. B. Bei den Hethitern'. *RLAss* VII, 234-25.
- 1989: 'Kompositbogen und Bogenschießen als Wettkampf im Alten Orient'. *Nikephoros* 2, 27-41.
- 1994: *Geschichte der hethitischen Religion* (HdO Abteilung 1.15) (Leiden/New York/Cologne).
- 1999: 'Natur- und Landschaftsbeschreibungen im hethitischen Schrifttum: Ein literarischer Spaziergang'. In Milano, L., de Martino, S., Fales, M.F. and Lanfranchi, G.B. (eds.), *Landscapes. Territories, Frontiers and Horizons in the Ancient Near East* (Papers presented to the XLIV. Rencontre Assyriologique Internationale, Venezia, 7-11 July 1997), vol. 1 (History of the Ancient Near East Monograph III.1) (Padua), 17-27.
- Heltzer, M. 1998: Review of J.-P. Vita, *El ejército de Ugarit* (Madrid 1995). *Orientalia* 67, 139-43.

- Herold, A. 2004a: 'Funde und Funktionen – Streitwagentechnologie im Alten Ägypten'. In Fansa and Burmeister 2004, 123-42.
- 2004b: 'Streitwagen und Zubehör'. In Petschel, S. and von Falk, M. (eds.), *Pharao siegt immer – Krieg und Frieden im Alten Ägypten* (Hamm), 98-107.
- Hoffmann, I. 1984: *Der Erlaß Telipinus* (THeth 11) (Heidelberg).
- Houwink ten Cate, P.H.J. 1983-84: 'The History of Warfare according to Hittite Sources: The Annals of Hattusilis I'. *Anatolica* 10, 91-110; 11, 47-83.
- Jakob, S. 2003: *Mittelassyrische Verwaltung und Sozialstruktur. Untersuchungen* (Cuneiform Monographs 29) (Leiden/Boston).
- Joannès, F. (ed.) 2001: *Dictionnaire de la civilisation mésopotamienne* (Paris).
- Kempinski, A. 1983: *Syrien und Palästina (Kanaan) in der letzten Phase der Mittelbronze IIB-Zeit (1650-1570 v. Chr.)* (Ägypten und Altes Testament 4) (Wiesbaden).
- Kendall, T. 1974: *Warfare and Military Matters in the Nuzi Tablets* (Ann Arbor).
- 1981: 'gurpisu ša awēli: The Helmets of the Warriors at Nuzi'. In Morrison, M.A. and Owen, D.I. (eds.), *Studies on the Civilization and Culture of Nuzi and the Hurrians* (Winona Lake, IN), 201-31.
- Klengel, H. 1983: s.v. 'Kriegsgefangene'. *RLAss* VI, 241-46.
- 2002: 'From War to Eternal Peace: Ramesses II and Khattushili III'. *Canadian Society for Mesopotamian Studies Bulletin* 37, 49-56.
- Klinger, J. 1995: 'Das Corpus der Mašat-Briefe und seine Beziehungen zu den Texten aus Ḫattuša'. *ZAss* 85, 74-108.
- 2001: 'Hethitische Texte'. In Kaiser, O. (ed.), *Texte aus der Umwelt des Alten Testaments, Ergänzungslieferung* (Gütersloh), 61-81.
- 2005: 'Das Korpus der Kaskäer-Texte'. *AoF* 32, 347-59.
- Korfmann, M. 1972: *Schleuder und Bogen in Südwestasien von den frühesten Belegen bis zum Beginn der historischen Stadtstaaten* (Antiquitas 13) (Bonn).
- 1986: 'Die Waffe Davids. Ein Beitrag zur Geschichte der Fernwaffen und zu den Anfängen organisierten kriegerischen Verhaltens'. *Saeculum* 37, 129-49.
- Košák, S. 1982: *Hittite Inventory Texts* (THeth 10) (Heidelberg).
- Littauer, M.A. and Crouwel, J.H. 1979: *Wheeled Vehicles and Ridden Animals in the Ancient Near East* (Leiden).
- 1983: 'Chariots in Late Bronze Age Greece'. *Antiquity* 57, 187-92.
- 1996: 'The Origins of the True Chariot'. *Antiquity* 70, 934-39.
- 2002: 'A Late Bronze-Age Spoked Wheel from Lidar Höyük in Southeast Turkey'. In Raulwing, P. (ed.), *Selected Writings on Chariots, other Early Vehicles, Riding and Harness* (Culture and History of the Ancient Near East 6) (Leiden/Boston/Cologne), 314-26.
- Littauer, M.A., Crouwel, J.H. and Hauptmann, H. 1991: 'Ein spätbronzezeitliches Speichenrad vom Lidar Höyük'. *AA*, 349-58.
- Macqueen, J.G. 1986: *The Hittites and their Contemporaries in Asia Minor*, revised ed. (London).
- Masson, E. 1999: 'L'esprit conquérant des Hittites'. In Nehmé, L. (ed.), *Guerre et conquête dans le Proche-Orient ancien* (Antiquités Sémitiques IV) (Paris), 41-49.
- Mayer, W. 1995: *Politik und Kriegskunst der Assyrier* (Münster).
- Mayer, W. and Mayer-Opificius, R. 1994: 'Die Schlacht bei Kadesch – Der Versuch einer neuen Rekonstruktion'. *UF* 26, 321-68.
- Mazar, A. 1995: 'The Fortification of Cities in the Ancient Near East'. In Sasson, J. (ed.), *Civilizations of the Ancient Near East* (New York), 1523-38.

- Miller, R., McEwen, E. and Bergmann, C. 1986: 'Experimental Approaches to Ancient Near Eastern Archery'. *World Archaeology* 18, 178-95.
- Moorey, P.R.S. 1986: 'The Emergence of the light, horse-drawn chariot in the Near East c. 2000-1500'. *World Archaeology* 18, 196-215.
- Müller-Karpe, A. 1994: 'Anatolische Bronzeschwerter und Südosteuropa'. In Dobiat, C. (ed.), *Festschrift für Otto-Herman Frey zum 65. Geburtstag* (Marburger Studien zur Vor- und Frühgeschichte 16) (Marburg), 431-44.
- 1998: 'Untersuchungen in Kuşaklı 1997'. *MDOG* 130, 93-174.
- 1999a: 'Ein Großbau in der hethitischen Stadtruine Kuşaklı'. *Alter Orient Aktuell* 1, 19-22.
- 1999b: 'Untersuchungen in Kuşaklı 1998'. *MDOG* 131, 57-113.
- 2001: 'Untersuchungen in Kuşaklı 2000'. *MDOG* 133, 225-50.
- Müller-Karpe, H. 1980: *Handbuch der Vorgeschichte*, vol. 4, Pt 3 (Munich).
- Müller-Karpe, V. 2003: 'Eine Kultvase aus Kuşaklı-Sarissa'. In Özdoğan, M. and Başgeçen, N. (eds.), *From Villages to Towns. Studies Presented to Ufuk Esin* (Istanbul), 307-12.
- Murnane, W.J. 1990: *The Road to Kadesh. A Historical Interpretation of the Battle Reliefs of King Sety I. at Karnak*, 2nd ed. (Studies in Ancient Oriental Civilization 42) (Chicago).
- Naumann, R. 1971: *Architektur Kleinasiens von ihren Anfängen bis zum Ende der hethitischen Zeit*, 2nd ed. (Tübingen).
- Neu, E. 1974: *Der Anitta-Text* (StBoT 18) (Wiesbaden).
- Neve, P. 1993: *Ḫattuša: Stadt der Götter und Tempel. Neue Ausgrabungen in der Hauptstadt der Hethiter* (Mainz).
- Niemeier, W.-D. 2002: 'Ḫattuša und Ahḫijawa im Konflikt um Millawanda/Milet'. In *Die Hethiter und ihr Reich* 2002, 294-99.
- Oettinger, N. 1976: *Die militärischen Eide der Hethiter* (StBoT 22) (Wiesbaden).
- Ökse, A.T. and Toy, N. 1992: 'Sivas Müzesi'nde Bulunan Tunc Baltalar'. *TAD* 30, 135-47.
- Otten, H. 1961: 'Das Hethiterreich'. In Schmökel, H. (ed.), *Kulturgeschichte des Alten Orients: Mesopotamien, Hethiterreich, Syrien-Palästina, Urartu* (Stuttgart), 311-446.
- Parzinger, H. and Sanz, R. 1992: *Die Oberstadt von Ḫattuša. Hethitische Keramik aus dem zentralen Tempelviertel. Funde aus den Grabungen 1982-1987* (Boğazköy-Ḫattuša XV) (Berlin).
- Pecchioli-Daddi, F. 1982: *Mestieri Professioni e Dignità nell'Anatolia Ittita* (Rome).
- Polvani, A.M. 2002: 'Le divinità ittite e la guerra'. In Guidotto and Pecchioli Daddi 2002, 122-25.
- Postgate, D. 2004: s.v. 'Pfeil und Bogen. A. I. Nach schriftlichen Quellen. In Mesopotamien'. *RLAss* X, 456-58.
- Prechel, D. 2003: 'Von Ugarit nach Uruk'. In Sallaberger, W., Volk, K. and Zgoll, A. (eds.), *Literatur, Politik und Recht in Mesopotamien. Festschrift für Claus Wilcke*. (Orientalia Biblica et Christiana 14) (Wiesbaden), 225-28.
- Pusch, E.B. 1990: 'Metallverarbeitende Werkstätten der frühen Ramessidenzeit in Qantir-Piramesse/Nord'. *Ägypten und Levante* 1, 75-113.
- Quack, J.F. 2002: 'Da wurden die zwei großen Länder zu einem Land. Die Beziehungen zwischen Ḫattuša und Ägypten im Lichte ihrer diplomatischen Korrespondenz'. In *Die Hethiter und ihr Reich* 2002, 288-93.
- Raulwing, P. 1999: 'Neuere Forschung zum Kikkuli-Text. Eine kleine Bestandsaufnahme trainingsinhaltlicher Interpretationen zu CTH 284 vier Jahrzehnte nach

- A. Kammenhubers Hippologia Hethitica'. In Anreiter, P. and Jerem, E. (eds.), *Studia Celtica et Indogermanica. Festschrift für Wolfgang Meid zum 70. Geburtstag* (Archaeolingua 10) (Budapest/Innsbruck), 351-64.
- (ed.) 2002: *Selected Writings on Chariots, other Early Vehicles, Riding and Harness* (Culture and History of the Ancient Near East 6) (Leiden/Boston/Cologne).
- Raulwing, P. and Meier, H. 2004: 'Der Kikkuli-Text. Hippologische und methodenkritische Überlegungen zum Training von Streitwagenpferden im Alten Orient'. In Fansa and Burmeister 2004, 491-506.
- Richter, T. 2004: 'Der Streitwagen im Alten Orient im 2. Jahrtausend v. Chr. – eine Betrachtung anhand der keilschriftlichen Quellen'. In Fansa and Burmeister 2004, 507-54.
- Riemschneider, K. 1962: 'Hethitische Fragmente historischen Inhalts aus der Zeit Hattušilis III'. *JCS* 16, 110-21.
- Roth, M.T. 1997: *Law Collections from Mesopotamia and Asia Minor*, 2nd ed. (Atlanta).
- Schirmer, W. 2002: 'Stadt, Palast, Tempel. Charakteristika hethitischer Architektur im 2. und 1. Jahrtausend v. Chr.'. In *Die Hethiter und ihr Reich* 2002, 204-17.
- Seeher, J. 2002: 'Hattuša-Boğazköy – Hauptstadt eines Reiches'. In *Die Hethiter und ihr Reich* 2002, 156-63.
- Siegelová, J. 1986: *Hethitische Verwaltungspraxis im Lichte der Wirtschafts- und Inventardokumente* (Prague).
- Sommer, F. and Falkenstein, A. 1938: *Die hethitisch-akkadische Bilingue des Hattušili I* (Abhandlungen der Bayerischen Akademie der Wissenschaften. Philosophisch-historische Abteilung, N.F. Heft 16) (Munich).
- Starke, F. 1995: *Ausbildung und Training von Streitwagenpferden. Eine hippologisch orientierte Interpretation des Kikkuli-Textes* (StBoT 41) (Wiesbaden).
- Taracha, P. 2004: s.v. 'Pfeil und Bogen. A. II. In Anatolien'. *RLAss* X, 458-461.
- Ünal, A. 1973: 'Zum Status der 'Augures' bei den Hethitern'. *RHA* 31, 27-56.
- 1983: 'Untersuchungen zur Terminologie der hethitischen Kriegsführung I. "Verbrennen, in Brand stecken" als Kriegstechnik'. *Orientalia* 52, 164-180.
- 1984: 'Studien über das hethitische Kriegswesen II: Verba Delendi *ḫarnink-/ḫarganu-* "vernichten, zugrunde richten"'. *SMEA* 24, 71-85.
- van den Hout, T.P.J. 2004: s.v. 'Pferd (und weitere Equiden). A. II. In Anatolien'. *RLAss* X, 482-490.
- Ventzke, W. 1983: 'Zur Rekonstruktion eines bronzenen Schuppenpanzers'. In Hachmann, H. (ed.), *Frühe Phöniker im Libanon* (Mainz), 94-100.
- Vita, J.-P. 1995: *El ejército de Ugarit* (Madrid).
- von Brandenstein, C.-G. 1943: *Hethitische Götter nach Bildbeschreibungen in Keilschrifttexten* (Mitteilungen der Vorderasiatisch-ägyptischen Gesellschaft 46.2) (Hethitische Texte in Umschrift 8) (Leipzig).
- von Schuler, E. 1957: *Hethitische Dienstanweisungen für höhere Hof- und Staatsbeamte* (Graz).
- 1965: *Die Kaškäer* (Berlin).
- Yadin, Y. 1963: *The Art of Warfare in Biblical Lands in the Light of Archaeological Discovery* (London).
- Zaccagnini, C. 1977: 'Pferde und Streitwagen in Nuzi, Bemerkungen zur Technologie'. *Jahresbericht des Instituts für Vorgeschichte der Universität Frankfurt a. M.* 1977, 21-38.

CHAPTER 7

HITTITE CITIES: LOOKING FOR A CONCEPT*

Dirk Paul MIELKE

Abstract

Cities are reflections of the respective social and political structures of communities and thus show different characters in various societies. Taking this theory for granted it has to be assumed that the cities of the Hittites had their own distinctive character, which differed from settlements of other cultural regions. To understand the Hittite 'city concept' written as well as archaeological sources must be taken into consideration. For this purpose in the present article first the specific urban elements such as houses, public buildings, building complexes etc., which form part of Hittite cities will be discussed. Afterwards the underlying structures will be illuminated and finally an attempt to characterise the Hittite concept of city will be made.

INTRODUCTION

'Höyük and mountain city' – these terms are often opposed in order to characterise Hittite cities. The 'mountain city' is normally presented as a new settlement type arising only with the first appearance of the Hittites.¹ However, this classification is not entirely suited to describing the peculiarities of Hittite cities: many of the settlements known from archaeological evidence can be called 'mountain cities' simply by their position on natural hills within the mountainous Anatolian landscape. On the other hand, many of them are multi-period sites and thus could equally well be classified as 'höyüks'. The real background of the classification mentioned above is to be seen rather in the phenomenon on an extensive settlement policy enforced by the Hittites in the course of which numerous new cities were founded.

Instead of limiting the characterisation of Hittite cities according to their topographic situation, in this article a thesis of modern urban geography will

* I would like to thank Hermann Genz, Amir Gilan and Claudia Glatz for their helpful suggestions and comments.

¹ For example Bittel 1976, 105; Masson 1995, 63-64; Schirmer 2002, 205.

be followed, according to which a city is a reflection of the various social and political structures of a community.² Depending on this, different concepts of 'city' exist which have to be studied. In contrast with modern urban geography the sources for the past are severely limited. For this reason the picture that can be drawn up will remain in many respects vague. In order to track the idea of the Hittite city, a glance must first be cast on the actual sources. It is important to consider written as well as archaeological evidence in a thorough way, because only by evaluating both categories can the specific features of a Hittite city be recognised.³

BASICS FOR THE EXPLORATION OF HITTITE CITIES

From Hittite texts about 2000 place names are known,⁴ but it has to be borne in mind that not all of these need be located in Anatolia. All of them are marked with the Sumerian determinative URU = city, such as ^{URU}Sarissa. The Hittite equivalent is *happira*-, which originally means 'market' or 'place of trade'.⁵ However, these terms do not differentiate between different types of settlements. The determinative URU was used for cities as well as for villages. The importance of a settlement can only be deduced from the context in which it is mentioned, such as being the home of an important god like the weather god of Nerik (^{dU} ^{URU}Nerik), the place of administrative centre (É.GAL ^{URU}Hupišna), or otherwise in connections which necessitate the translation of this term as a simple village.⁶

Of all the cities mentioned in the texts only a few can be securely identified: foremost the capital Ḫattuša (today Boğazköy or Boğazkale in the province of Çorum); further we have the 'royal residence' of Šapinuwa (Ortaköy, province of Çorum), the 'border city' of Tapikka (Maşat Höyük, province of Tokat), and finally the 'provincial capital' of Sarissa (Kuşaklı/Başören, province of Sivas). These identifications were made according to texts found at the respective

² Lichtenberger 2002; see especially the quotation from the introduction: 'Städte sind wie verschlüsselte Bilderbücher über vergangene und gegenwärtige Gesellschaftssysteme, man muß sie aufschlagen und die Symbolik zu entschlüsseln versuchen.'

³ The few overviews on Hittite cities (Darga 1971; Naumann 1971; Thalmann 1990; Masson 1995; Bartl 1997; Schirmer 2002) focus rather on a simple description and do not use all the sources available.

⁴ del Monte and Tischler 1978; del Monte 1992.

⁵ Puhvel 1991 s.v. *happir(iy)a*-; Masson 1995, 65; Dinçol 1996, 118. See especially the detailed entry in Friedrich *et al.* 2000, 233-51 s.v. *happira*-.

⁶ See the collection of place and river names from Hittite texts (del Monte and Tischler 1978; del Monte 1992), in which all information connected to the specific place-names is listed up. For several cities monographic treatments are available (for example Lebrun 1976; Popko 1994).

sites. The identification of further sites known through excavations or surveys is an important item on the agenda of philological research. The historical geography of the Hittite period rests on information from the texts, such as distances between the settlements, geographical characteristics of a site, its position on a river, etc.⁷ In spite of the major progress made in the field of Hittite geography in the past the identification of specific sites is still haunted by many uncertainties, thus this remains a highly controversial field of research.

Important information for our approach concerning the architecture, topography, organisation and administration of cities can often be gleaned only from indirect references, as no specific Hittite texts concerning these topics are known. However, a number of other texts, historical or administrative as well as laws, myths and purification or foundation rituals, but especially festival texts, offer many hints concerning questions related to Hittite cities.

Archaeological sites are as numerous as textual references, but unfortunately only at a few sites have excavations been undertaken so far. The prerequisites for investigating urban structures are given for just a handful of sites. Apart from Boğazköy (Fig. 1), only at Alaca Höyük (Fig. 2), Alişar and Kuşaklı (Fig. 3) have large areas been excavated and, just as important, been published. Due to its long history of exploration Boğazköy provides a major part of the evidence, although large areas of the city still await investigation. In Kuşaklı excavations took place only from 1992 to 2004, but here the results have been augmented by a major programme of geophysical investigation. Thus, information on structures not visible on the surface, such as the complete course of the city wall and the position of the gates, became available without excavation.⁸ At most other sites only smaller areas were excavated. These sometimes, however, provided valuable additions to our knowledge of Hittite cities. Up to now no rural settlements, be they villages, hamlets or farmsteads, have been investigated.

URBAN ELEMENTS OF HITTITE CITIES

According to the archaeological evidence we can define different types of buildings such as palaces, temples or gates. Other buildings remain ambiguous in their function. Even if they are excavated according to modern standards and

⁷ Summaries on the state of research on Hittite geography are provided by Gurney 1992; Mellaart 1993. For an extensive bibliography, see Siegelová and Souček 1996, 243-53.

⁸ For the geophysical survey in Kuşaklı, see the contributions of H. Stümpel and his collaborators in the preliminary reports of the excavation (Stümpel 1995; 1996; 1997; 1998; Stümpel and Lorra 1999; Stümpel and Erkul 2001; 2006).

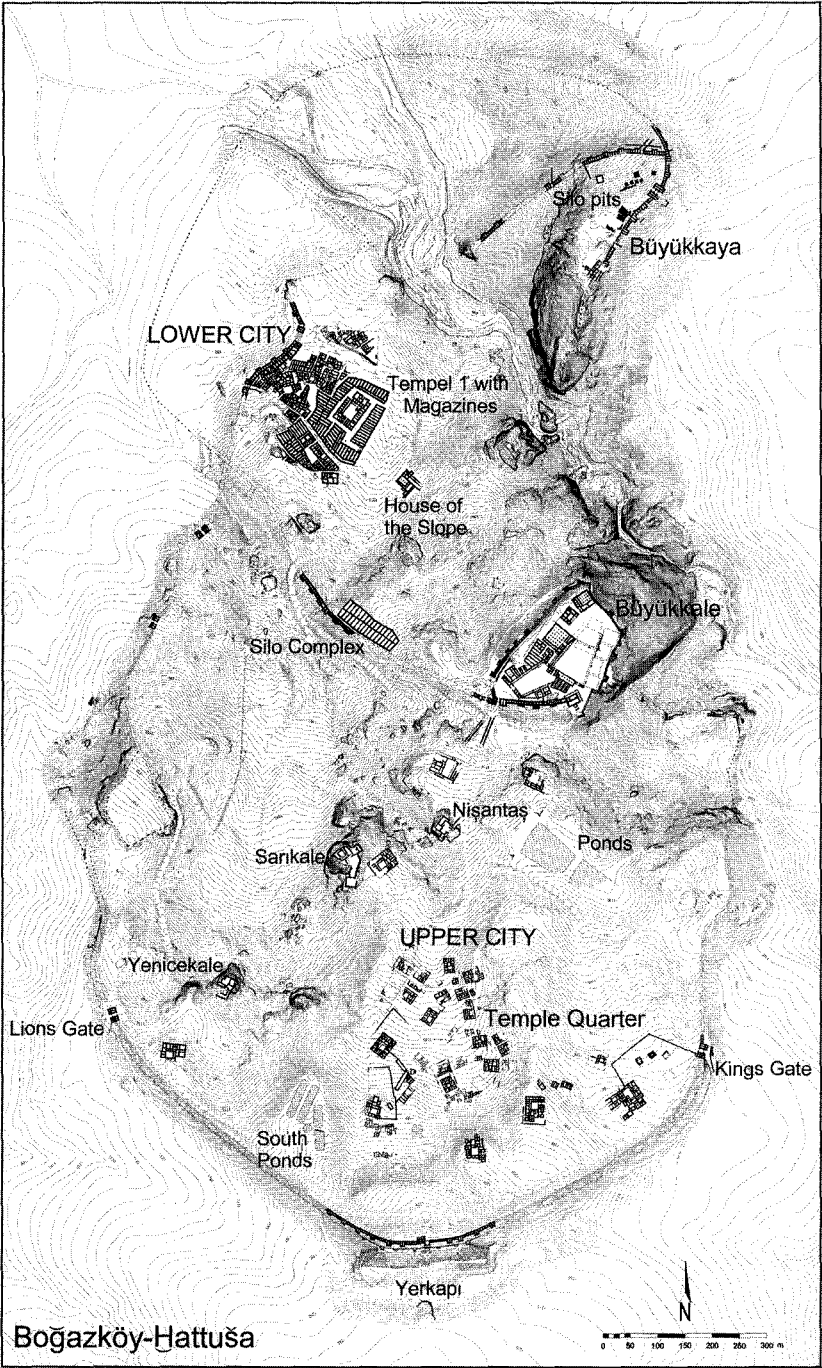


Fig. 1. Map of Boğazköy-Hattuša (Boğazköy Expedition).

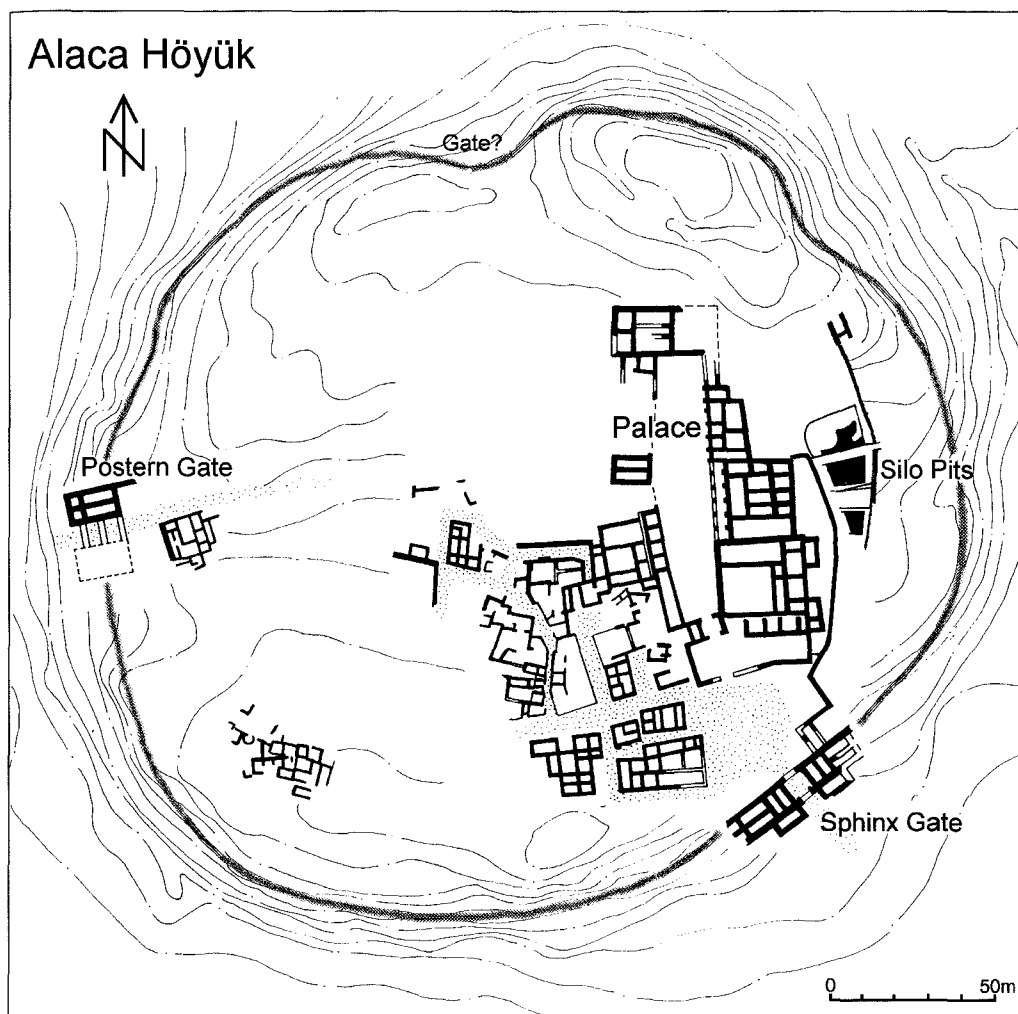
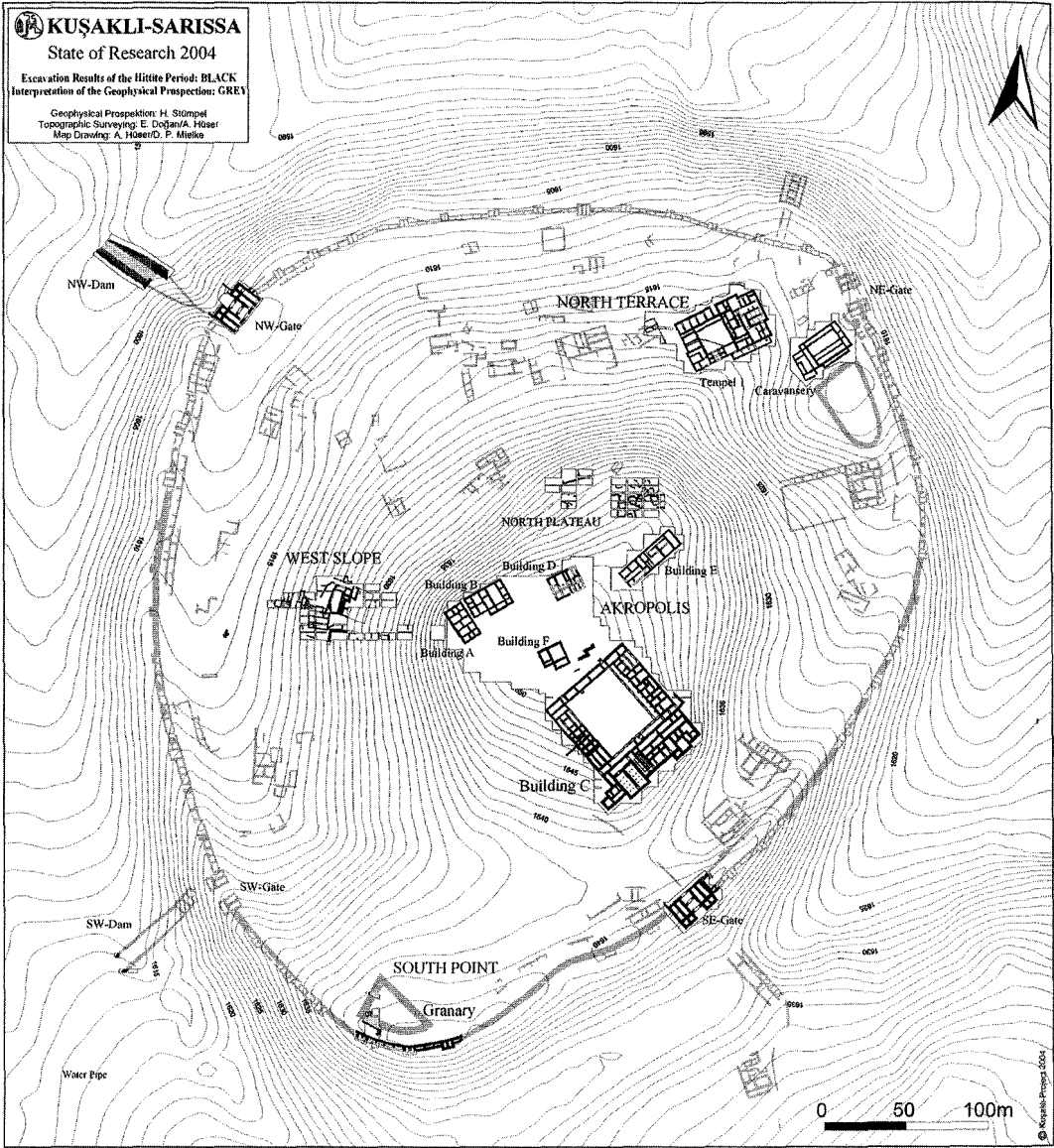


Fig. 2. Map of Alaca Höyük (after Çınaroğlu and Genç 2003, Çiz. 1, 2 and 4, and A. Müller-Karpe 1994, Abb. 58).



yield large amounts of material, the functions of some remain elusive. Small-scale buildings with thin walls are generally interpreted as domestic dwellings, whereas large buildings with thicker walls are seen as official or administrative structures. In the textual sources a multitude of special buildings are mentioned, which are generally characterised with the determinative É = house.⁹ But these do not necessarily each represent a distinctive type of building; often these terms denote only single rooms or stand for the institution rather than for the building itself. Moreover, other structures such as streets, squares, water conduits, ponds and storage installations have to be taken into consideration as elements of urban planning.

The connection between the structures retrieved by archaeology and the terms known from textual sources is not always easy and straightforward, thus different interpretations for such terms have been suggested. This article is not the place to repeat long and complicated philological arguments, but at least the most commonly used terms will be mentioned. Furthermore, the administrative institutions can only be grasped in textual sources. Again due to lack of space only a short overview of these can be given here.

Our ideas about the outward appearance of Hittite cities rely to a great extent on reconstructions (Fig. 4.1), as for most buildings only the foundations have survived. The upper parts of walls are rarely preserved, but they all seem to follow the same pattern (Fig. 4.3):¹⁰ on a stone foundation a wooden framework was erected, filled with mud bricks and finally the walls were coated with mud plaster. The buildings were covered by flat wooden roofs waterproofed by a thick covering of clayey soil. This style of building, which is also mentioned in Hittite texts,¹¹ represents old Anatolian techniques. It is mainly through conflagration that the upper parts of the walls have sometimes been preserved: the wood is preserved only as a negative, as the fire has consumed it, but the mud bricks were hardened and thus survived (Fig. 4.2). In other probably more important buildings the upper parts consisted of stone, too, which generally was well dressed. Ceramics with architectural representations help to reconstruct the upper parts of the buildings: they show windows, the half-timbered structure, protruding wooden beams and crenellations (Fig. 4.4-6).¹² In some vases city models made of precious metals are mentioned,¹³ but it is quite unlikely that these have survived in the archaeological record.

⁹ See the compilation of Tischler 2001, 220-21.

¹⁰ For the building techniques, see Naumann 1971, 55-203; Mielke 2009.

¹¹ Boysan-Dietrich 1987.

¹² Parzinger and Sanz 1992, 72 and Taf. 60-65; Neve 1993 (with further references).

¹³ KUB 15.1 III 17'-21' (del Monte and Tischler 1978, 21); KUB 15.5 IV 8'-9' (del Monte and Tischler 1978, 215). See also Friedrich *et al.* 2000, 233-51 s.v. *happira-*, 241.

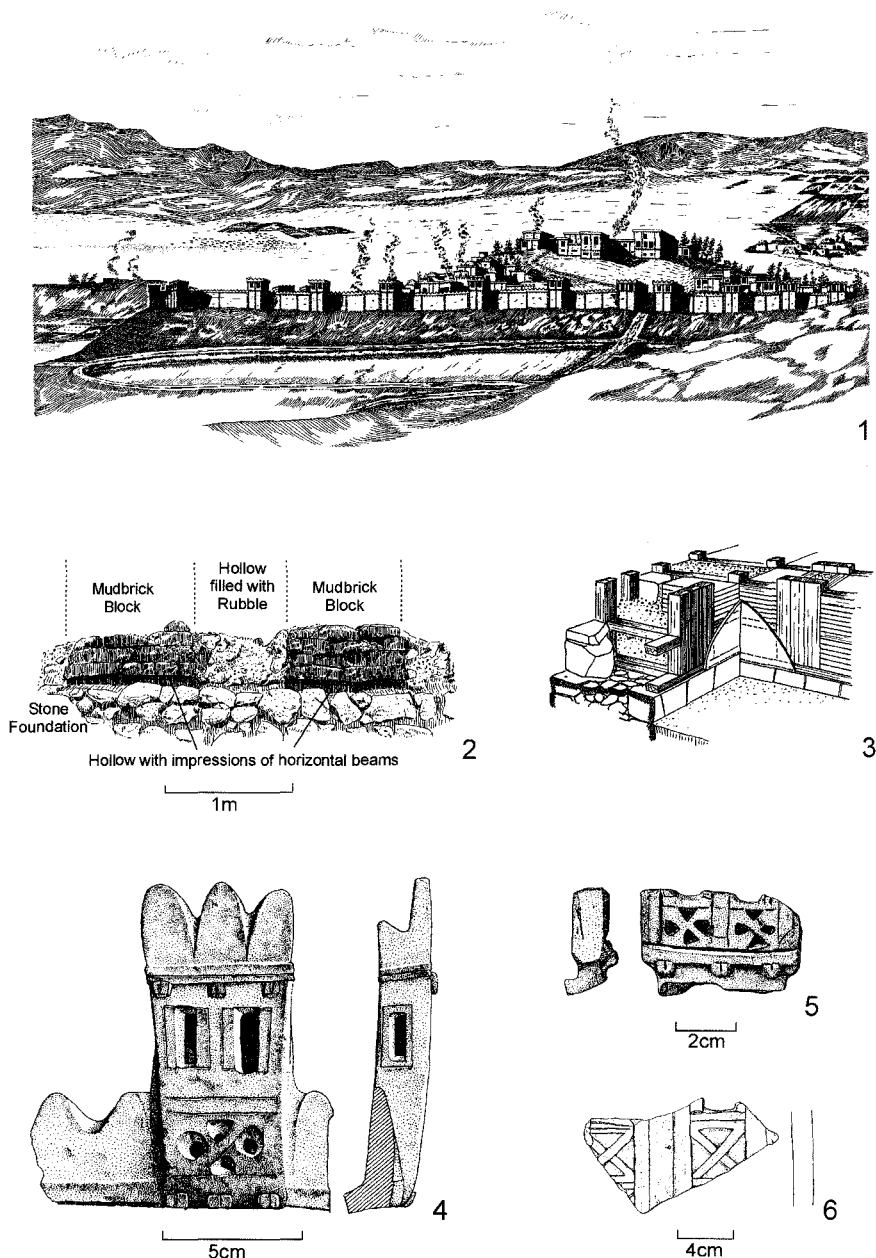


Fig. 4. Architecture: (1) Reconstruction drawing of Kuşaklı-Sarissa (Kuşaklı Expedition; drawing: M. Ober); (2) Burnt wall with negative traces of a timbered wall construction form Büyükkale/Boğazköy (after Naumann 1971, Abb. 92); (3) Reconstruction of a wall from Temple 1 in Boğazköy by P. Neve (after Neve 1969, Abb. 2); (4-6) Depictions of architecture on Hittite pottery from Boğazköy (4: after Schirmer 1985, fig. 126; 5-6: after Parzinger and Sanz 1992, Taf. 64.27, 31).

PALACES AND RESIDENCES OF THE NOBILITY

The most important elements in the larger cities were palaces, which in textual sources are characterised with the Sumerogram É.GAL = great house.¹⁴ This term, however, has two different meanings – the actual building or the institution. For a long time there was debate about whether the word *Ḫalentu(wa)*- was the Hittite term for palace.¹⁵ According to a Hittite-Hurrian bilingual (KBo 32.13) synonymous use of the two words seems likely, but they do not have exactly the same meaning. *Ḫalentu(wa)*- seems to refer just to the actual building; it was not used for the institution.¹⁶

The palaces were a crucial element for the administration and organisation of the Hittite state.¹⁷ Besides being responsible for levying taxes they also served as regional economic and distribution centres. We have only little information about the subdivision of the land into districts and provinces, but according to tax registers a tripartite division of the administrative system seems likely: at the top we have the capital, followed by the regional palaces, which in turn were responsible for several communities. Some ranking seems to have existed between the palaces, as shown by the texts from Maşat Höyük, which were dispatched from Şapinuwa.¹⁸ A similar relation has been proposed for Sarissa and the not yet securely located city of Sulupassi.¹⁹ Şapinuwa obviously occupied a special position in this system, as it seems to have been a royal residence, in which the Great King and Queen stayed for long periods of time.²⁰ In other cities, as well, palaces existed in which the king stayed on his frequent travels through the country, or which he used as a winter lodging.²¹

The palace as a building is mentioned only in cultic texts or instructions, but without any specific description of its architecture. Thus no correlations between these descriptions and the actual excavated remains can be made.²² However, it becomes clear that different buildings or institutions belonged to

¹⁴ For the palaces, see Güterbock 1974; van den Hout 2004a.

¹⁵ It has been a matter of debate as to whether *Ḫalentu(wa)*- referred to the entire palace, the residential units of the palace, or a part of the temple. For summaries of this discussion see Güterbock 1974; Haas and Wäfler 1973-74; Alp 1993, 22; Wilhelm 1997, 14 n. 16; Güterbock and van den Hout 1991, 59-60; van den Hout 2004a. For references to *Ḫalentu(wa)*-, see Alp 1993 and the entry in Friedrich and Kammenhuber 1991.

¹⁶ Güterbock 1974, 308.

¹⁷ For a fundamental discussion of this subject, see Siegelová 2001. Additional aspects were discussed by Imparati 2002; Alp 1993.

¹⁸ Alp 1991, 36-37.

¹⁹ Siegelová 2001, 196-97.

²⁰ Alp 1991, 37; Siegelová 2001, 196, 200-02; Imparati 2002, 96 and n. 21.

²¹ Siegelová 2001, 208; van den Hout 2004a, 228.

²² For a discussion of the palace as a building, see Güterbock 1974, 306-14; additional remarks by Bittel 1983, 87-93.

the palace, such as gates, cult buildings, kitchens, storage buildings, workshops and many others.²³ Courtyards, around which the different buildings were grouped and which served to control circulation inside the palace, seem to have been of special importance. Different palaces are mentioned in the texts: besides that of the king those of the queen and of the grandfather or grandfathers are mentioned.²⁴ It has to be questioned whether the terms used for the palace (especially *ḫalentu(wa)-*) really denote a specific type of building, for the sometimes confusing evidence from the textual sources seems rather to indicate that the terms had varying meanings, and that a palace could consist of either several separate buildings or just of some groups of rooms.²⁵

The most important source, which provides specific information concerning the institution and organisation of a palace, is the so-called *MEŠEDI* text (IBoT I 36 /CTH 262),²⁶ which is an instruction to the royal bodyguard. It mentions numerous personnel, but also different buildings, which provide a good impression of the extensive palace building-complex. The information gleaned from this text often was directly compared with the remains excavated on Büyükkale, the citadel in the capital of Hattuša.²⁷ While a general comparison seems to be possible, H.G. Güterbock has already pointed out that the text and the majority of the buildings excavated are not directly contemporary.²⁸ Furthermore, the text itself contains evidence that it referred not only to the specific palace in the capital.²⁹

The 'royal fortress' on the hill of Büyükkale in the capital Hattuša will serve as a starting point to explore the archaeological evidence for palaces (Fig. 5.1).³⁰ Although not directly proven, it is generally accepted that the palace of the Hittite Great Kings was located here. Excavations have produced mainly the remains of a complex of buildings dating to the later part of the Empire period (Bauschicht III). Traces of earlier buildings were also found, but these in general were heavily disturbed. The palace complex on Büyükkale covered an area of approximately 250 × 140 m (some 31,185 m²) and was

²³ Güterbock 1974, 311-14; Neve 1982, 136-41; van den Hout 2004a, 228-29.

²⁴ Güterbock 1974, 307; van den Hout 2004a, 228-29.

²⁵ As already suspected by Bittel 1983, 88.

²⁶ Jakob-Rost 1965 (especially note the sketch of the palace according to the written evidence); Güterbock and van den Hout 1991.

²⁷ The topography of Hattuša is still a matter of controversy. See Haas and Wäfler 1977; Meyer 1995; Popko 2003.

²⁸ This text is dated to the Middle Hittite period, whereas the architectural remains date to the Empire period.

²⁹ Güterbock 1974, 311; Bittel 1983, 89.

³⁰ For an extensive discussion of the excavations on Büyükkale, see Neve 1982. Short overviews are provided by Bittel 1983, 87-132; Seeher 2002, 102-15.

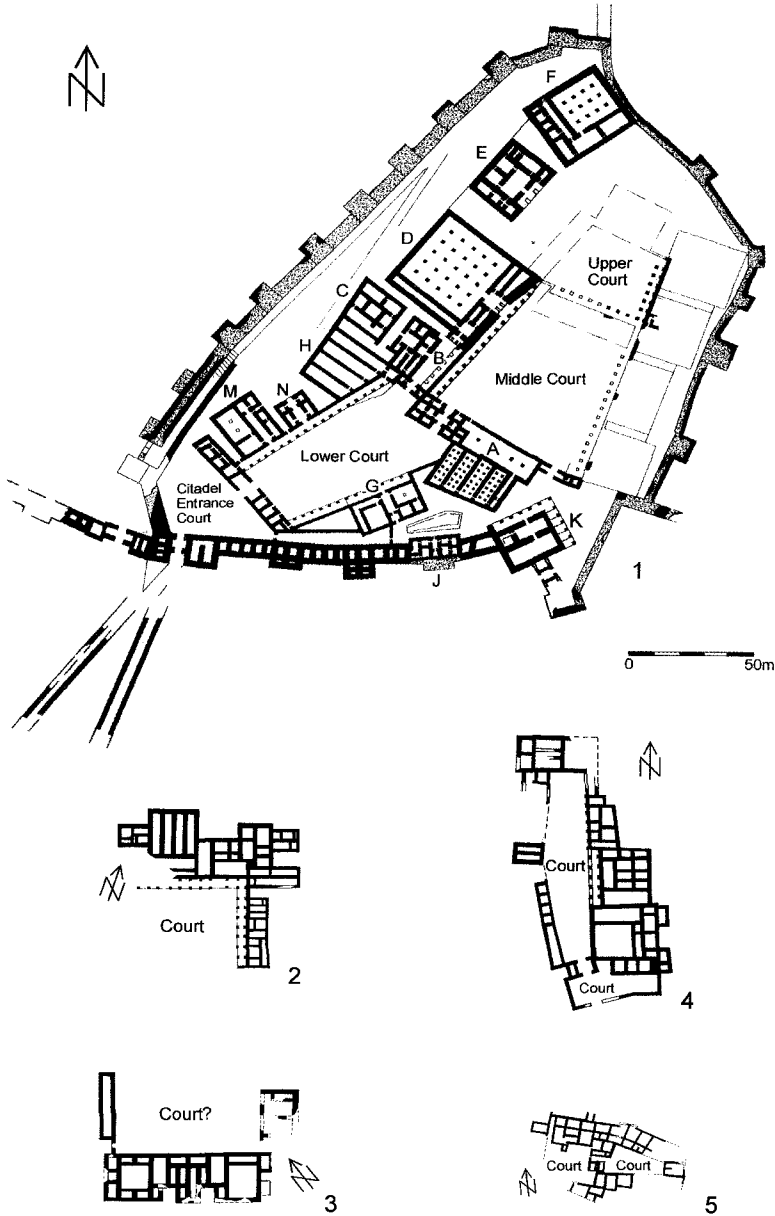


Fig. 5. Hittite palaces: (1) Büyükale/Boğazköy-Hattuša (after Seeher 2002, fig. 4); (2) Maşat Höyük-Tapikka (after Özgüç 1982, plan 4); (3) Ortaköy-Sapinuwa, Building A (after A. Süel 2002, fig. 4); (4) Alaca Höyük (after Bittel 1976, Abb. 111); (5) İnadıktepe (after Özgüç 1988, plan I).

surrounded by a buttressed fortification wall. The main point of access was the southern gate, which could be reached from the outside by a way leading over arches. The layout of the structures confirms the importance of courtyards gleaned from the textual sources. These courtyards were surrounded by colonnades, which gave access to the actual buildings. Furthermore, gates separated the different courtyards. From the main gate one first reached the so-called court of the citadel gate before entering the actual palace. The palace itself was only reached after entering another gate, which was situated in the centre of a long but narrow building. This gate opened into the lower court, which was flanked on both sides by long colonnaded halls. Through these colonnades access to several other buildings around the lower court could be obtained. It has to be stated that due to their poor preservation and the ambiguous nature of the inventories the function of most buildings remains obscure. Through another monumental gate, which separated the outer and the inner parts of the palace, one entered the central court. Colonnaded halls characterised this court, as well. In its north-western corner the large Building D was situated, which is thought to be the audience hall. Buildings B and C presumably had cultic functions. Building A occupied the entire southern front of the court; its backward part consisted of a row of magazine rooms. It is here that the largest collection of clay tablets found on Büyükkale came to light, thus it also was termed the 'archive building'. Smaller collections of clay tablets were also found in Buildings E and K. North and west of the court only sparse remains of buildings have been preserved, but it is clear that one other court existed, the so-called upper court. Through this court Buildings E and F on the northern tip of Büyükkale were reached, which are thought to be the actual habitation quarters of the royal family. In the south-eastern part of Büyükkale another small court with a pool of possible cultic function is situated. Building J, integrated into the fortification, seems to have been related to the pool. In the south-east another gate in the fortification offered direct access to the central court.

This overview demonstrates that the palace is quite a complex structure. Already K. Bittel had pointed out its highly individual layout of the palace of Hattuša, which was dictated by the specific conditions of the capital.³¹ From an architectural point of view it can be characterised as an assemblage of individual structures, connected by courts surrounded by colonnaded halls.³² It is generally agreed that this is a characteristic feature of Hittite palace architecture.³³

³¹ Bittel 1983, 105.

³² Neve 1982, 137-41; Bittel 1983, 105, 107. For the columned hall, see Özgüç 1982, 10, 82.

³³ Bittel 1976, 116-18; Naumann 1971, 405 and especially Neve 1982, 137-41.

This is clearly visible in the palace of Alaca Höyük, too, for which the unfortunate term ‘temple palace’ is often found in the literature (Fig. 5.4).³⁴ From a square behind the Sphinx Gate a simple gate lead into the forecourt of the palace, which occupied the entire eastern part of the city (Fig. 2). The actual palace, with its long irregular court, is entered through a double gate. The central part of the eastern side of the court is occupied by a long colonnaded hall, which provided access to the rooms behind it. Around the court, which again formed the unifying element of the building-complex, other rooms and structures are grouped. As in Boğazköy the specific function of the different parts of the building cannot be established. That the palace of Alaca Höyük also served as an administrative and distribution centre is illuminated by the recently discovered large grain silo pits situated directly east of the building (see below). The palace occupies an area of approximately 3600 m² and has been dated to the Empire period. A predecessor dating to the Middle Hittite period seems to have been of a similar layout, but has been excavated but partly.³⁵

A palace of the Middle Hittite period has been uncovered in Level III at Maşat Höyük (Fig. 5.2).³⁶ It occupies the central part of the rather small settlement mound. Although the building has not been excavated in its entirety, the typical elements discussed above still can be clearly recognised: the rooms of the northern and eastern wings are grouped around a court with colonnaded halls. The excavated area covers about 3300 m². According to the texts discovered in an archive in the eastern wing the site served as border garrison, and the palace was the seat of a Hittite border commander (*BÊL MADGALTI*).

A major palace complex also seems to have existed in Ortaköy-Şapinuwa, but the evidence published so far does not allow more detailed statements.³⁷ Several buildings were encountered, but none of them has been completely excavated. The whole area of the supposed palace seems to have been

³⁴ Koşay and Akok 1966, 8-14, 121-28; Naumann 1971, 401-04. The excavators coined the term ‘temple palace’, as they identified evidence for cultic activities in the north-western part of the building (Koşay and Akok 1966, 126). However, cultic activities in buildings do not necessarily identify that building as a temple.

³⁵ The palace is assigned to Level II, the older palace to Level III of the Late Bronze Age Period II (see the overview of the stratigraphy in Koşay and Akok 1973, pl. XCIII). A new discussion of the stratigraphy of Alaca Höyük is provided by Özgüç 1993, 473-74. For the older palace, see Naumann 1971, 403-04 and fig. 537. Miglus (2004, 267) wrongly assumes a Middle Bronze Age date.

³⁶ Özgüç 1978, 1-17, 49-68; 1982, 1-11, 73-83. There seem to be some reservations against calling this building a palace (van den Hout 2004a, 229), but without any apparent reason.

³⁷ A. Süel 1998, 39-41 with plan 1 and resim 1-6; 2002, 158-60 with fig. 4.

surrounded by a wall.³⁸ Quite unusual is the fact that not only the palace but the entire city was situated in a rather flat plain, which only on the north-west and north-east was bordered by a river. The central structure seems to have been the monumental Building A (Fig. 5.3), which produced a large number of clay tablets dating to the end of the Middle Hittite and the beginning of the Empire period. It is not yet clear whether this building had a court with colonnaded halls, as it has not been exposed completely. The contents of the texts published so far indicate that this building served as a royal residence, in which the Great King and the Queen seem to have stayed for extended periods of time. Important for the identification as a palace is also the discovery of a storage building (B) containing large pithoi (Fig. 8.4 below), as this further illustrates the economic importance of palaces worked out for other sites.³⁹

Lastly Kuşaklı-Sarissa has to be discussed. In a text found at the site an *Ḫalentu(wa)*- with a bath house is mentioned for the city.⁴⁰ Another *ḫalentu(wa)*- existed in the *ḫuwaši* sanctuary, which has been located in the mountains above the city.⁴¹ So far the excavations on the acropolis of Sarissa have not produced any structures that can be compared with the palace buildings discussed above.⁴² Instead, several free-standing buildings dated to the later part of the Empire period were encountered. The south-eastern part of the acropolis was occupied by the monumental Building C, which had already been destroyed at the end of the Middle Hittite period and was never rebuilt.⁴³ In the central part of the acropolis only fragmentary walls have been found from the initial phase of the city. They do not allow us to speculate what kinds of buildings originally stood on the acropolis besides Building C. Geophysical surveys produced evidence for large structures in other parts of the city, which could be identified as palaces, but it would be quite unusual for the palace not to have been located on the acropolis.

Before concluding with the palaces a phenomenon related to them needs to be discussed. As well as the palaces, the texts frequently mention residences of the nobility as institutions (house of xx). In many smaller cities and villages

³⁸ As no complete plan has been published for Ortaköy yet, references will be made to an aerial photograph published in the appendix to Ünal 2003. On the left side of the picture a wall parallel to Building A can be recognised (another wall diagonal to Building A is obviously not contemporary). On the extreme right of the picture another roughly parallel wall can be recognised, which terminates the palatial complex to the south. This latter wall is better visible in an aerial view published by A. Stiel 1998, resim 1.

³⁹ See n. 98.

⁴⁰ Wilhelm 1997, 9-14.

⁴¹ Wilhelm 1997, 12-14.

⁴² A. Müller-Karpe 1999-2000.

⁴³ A. Müller-Karpe 2000. This building is interpreted as the temple of the local weather god.

members of the nobility represented the central authority.⁴⁴ From an architectural point of view their residences should not have differed greatly from small palaces.⁴⁵ The building remains uncovered in Level IV at İnandıktepe probably represent such a residence of a noble Hittite (Fig. 5.5).⁴⁶ This building is generally referred to as a temple, but it shows features which relate it to palaces:⁴⁷ on a small elongated hill a building dominated by two courts occupied an area of approximately 2000 m². Several groups of rooms clustered around these courts; only the colonnaded halls are missing.⁴⁸

Among the residences of the nobility also a house of the king (É.LUGAL) is mentioned as an institution. However, it is quite likely that this is just a synonym for the royal palace (É.GAL), as A. Goetze has already demonstrated that no distinction between the revenues of the king and the state can be made.⁴⁹ In the same way the houses of the city of Ḫattuša mentioned in other cities (for instance É^{URU}Ḫatti^{URU}Sarissai = house of the city of Ḫattuša in the city of Sarissa) have to be interpreted as a dependency of the palace of the Great King. We do not know whether these institutions were represented by a special type of building, or rather were ordinary buildings or storerooms. It is not yet clear whether the seal-houses (É^{NA4}KIŠIB), dispersed throughout the empire, are part of the same institution. Other cities were also represented in the capital by their own houses. Again it remains unclear how these can be identified in the archaeological record.⁵⁰

TEMPLES

Temples are the subject of a separate chapter in this book, so I shall limit myself to some additional remarks. One of the main problems we face is the actual distinction between palaces and temples. Two experts on Hittite architecture, R. Naumann and P. Neve, have stated repeatedly that the two types of building have a related function, as temples could also be seen as

⁴⁴ See also Bryce in this volume, pp. 89-91.

⁴⁵ K. Bittel already (1983, 87-88) suspected that smaller palaces rather should resemble manors.

⁴⁶ Özgüç 1988, 2-8, 70-76.

⁴⁷ The published plans are difficult to use, as the plans of the building (Özgüç 1988, plans 1-2) do not entirely match the topographical map (Özgüç 1988, map 5). For a reconstruction of the topographical situation and arguments for the interpretation as a manor, see Mielke 2006a, 253-55, fig. 1.

⁴⁸ Özgüç 1988, 56, 124. The author noted that the extensive destruction of the architecture also has to be taken into account.

⁴⁹ Goetze 1957, 109.

⁵⁰ Sieglóvá (2001, 197) compares these buildings to the treasuries of different Greek cities in Delphi. Possibly these institutions can be equated with the storage rooms around the great temple.

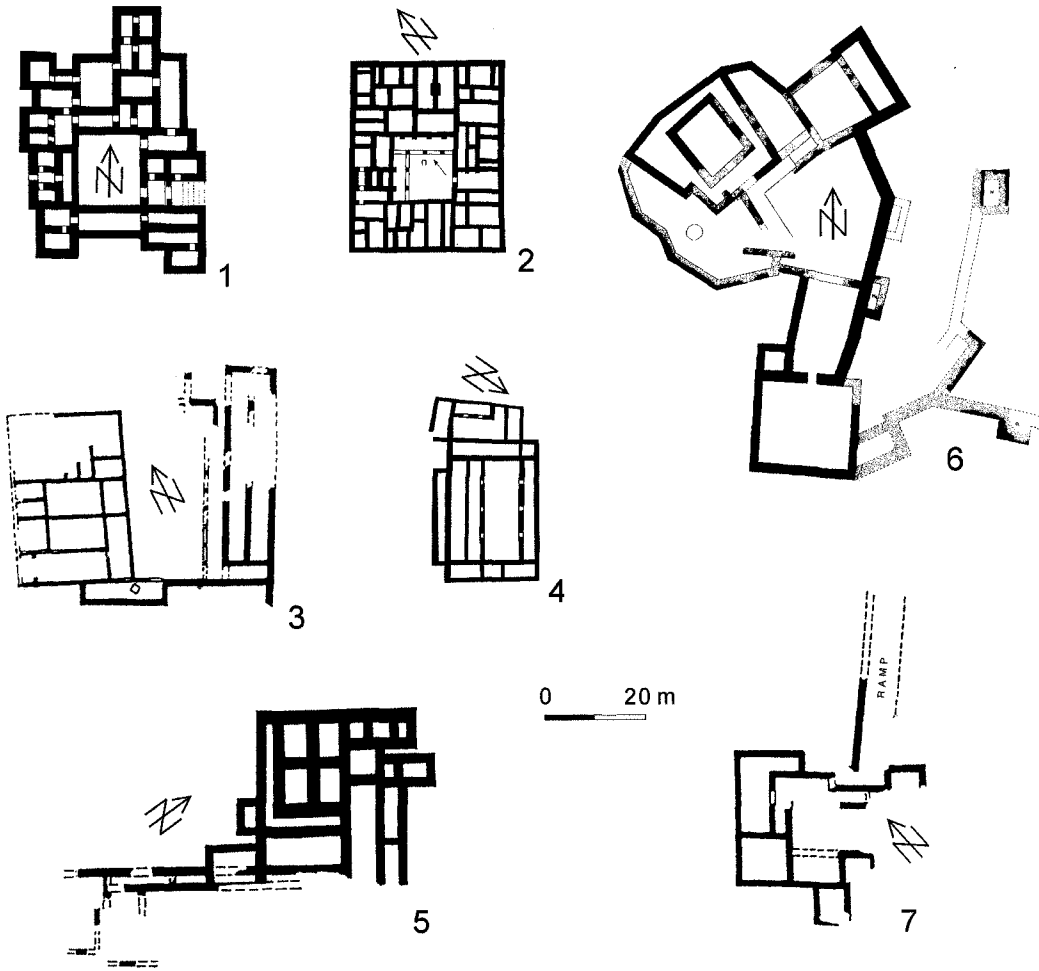


Fig. 6. Buildings with special function: (1) Boğazköy, Temple 3 (after Neve 1999, Abb. 72a); (2) Boğazköy, Temple 6 (after Neve 1999, Abb. 72b); (3) Boğazköy, North Building (after Neve 1996a, Abb. 134); (4) Kuşaklı, 'Caravansery' (Kuşaklı Expedition); (5) Boğazköy, House at the slope (after Schirmer 1996, Beil. 1); (6) Boğazköy, Sarıkale (after Naumann 1983, Abb. 2); (7) Boğazköy, Nişantepe (after Neve 1996a, Abb. 174).

palatial residences of the gods.⁵¹ The main difference is that the elements characteristic for palaces are reproduced in temples in a more regular, condensed way. In contrast to the large and irregular courts of the palaces, those of the temples are smaller and rectangular. The tendency to condensation is also found in the ground plans of temples: in the beginning they are characterised by rooms protruding from the façade, later on they are reduced to simple rectangular plans (Fig. 6.1-2).⁵²

The similarities sometimes make it difficult to distinguish between palace and temple, especially if other indications for the function of the building are lacking. Thus it is not clear whether the architectural remains uncovered in Tarsus represent a palace or a temple.⁵³ In addition, the identification of the building in Maşat Höyük as a palace is not secure: with its rectangular court and a group of rooms protruding from the façade, comparable to the adytum of a temple, the structure resembles more a temple in layout (Fig. 5.2).⁵⁴ On the other hand, it should be pointed out that the structure has not been completely revealed, and the texts found in it demonstrate its position in a supra-regional administration, which would rather suggest a palace.⁵⁵ Again at İnandıktepe building remains due to the inventory were identified as a temple (Fig. 5.5),⁵⁶ but the very irregular layout tends to favour identification as a palace, as has already been pointed out.

It should be kept in mind that the Hittite terms for functional units do not necessarily correspond to distinctive types of buildings. Related to this problem is the question of whether temples or buildings of a cultic nature actually existed in the palace complex on Büyükkale.⁵⁷ Based on texts, which refer to actions of a cultic nature in the palace, several attempts have been made to identify excavated structures as temples or shrines. Building C, with a large pool at its centre, may be named in this context,⁵⁸ but one has also to take into account the fact that simple shrines, which cannot always be identified by archaeological means, must have existed. As an analogy one can use a mosque, which may consist of a single room in any kind of building, although it is usually housed in a distinctive type of building. From a functional point of

⁵¹ Naumann 1971, 451; Neve 1982, 140. See also Zimmer-Vorhaus in this volume.

⁵² Neve 1982, 140.

⁵³ Goldmann 1956, 49-50 and plan 22; Naumann (1971, 404-05) interprets the building as a palace.

⁵⁴ See n. 36.

⁵⁵ These texts mainly consist of letters, see Alp 1991.

⁵⁶ Özgüç 1988.

⁵⁷ Popko 2003 (the line of argument is severely affected by the proposed new datings for the Upper City). More probable are the ideas presented by van den Hout 2004a, 228.

⁵⁸ Neve 1982, 113-15.

view Hittite temples were not only places of worship but also economic units which were integrated into the system of the palatial administration.⁵⁹

Another aspect, which needs to be illuminated, is the integration of temples into the urban landscape. Especially in Hattuša temples are a characteristic element of the city (Fig. 1), thus the capital has often been termed the city of gods and temples. It can be suspected that the impressive number of temples – 31 – is a special feature of the capital, as numerous cults from all regions of the vast empire had to be represented there.⁶⁰ But even in a smaller city such as Sarissa (Fig. 3) the two largest and most dominant buildings are temples (Building C and the temple on the North Terrace). It is noteworthy that the larger temples – in Boğazköy (especially Temples 1-7, 30 and 31) as well as in Kuşaklı – were erected in prominent positions on artificially constructed or enlarged natural terraces, whereas Hittite architecture otherwise tended to be integrated into the natural topography.

It seems to be no accident that the temple quarter occupied the central area of the Upper City in Hattuša. However, the individual temples do not exhibit any meaningful relationship to their neighbours. Only in the eastern part of the temple quarter are several temples aligned in a row (Temples 29, 13-15 and 10-12). Thus the temple quarter seems to have had no master plan; rather it represents an unstructured accumulation of cultic buildings, such as we find in early Christian monasteries and church complexes.

BUILDINGS OF SPECIAL FUNCTION

In addition to the two main elements of temple and palace, several other official buildings with a specialised function have to be mentioned. They can be identified from the respective archaeological finds.

In Boğazköy archives and administrative buildings were also found outside the royal citadel.⁶¹ Situated immediately south of Büyükkale is the rock outcrop of Nişantepe, where the so-called west building was excavated.⁶² The more than 3000 clay bullae found here indicate that the building was used as a royal archive or as an administrative building connected to the palace.

Another archive of official function, the so-called 'house on the slope', has been identified on the declivity leading from Büyükkale to the Lower City (Fig. 6.5).⁶³ This identification was proposed due to the numerous fragments of clay tablets found there during excavation.

⁵⁹ Imparati 1999, 344.

⁶⁰ Neve 1996a, 31; 1999, 156-57.

⁶¹ For archives and administrative buildings in general, see Naumann 1971, 430-33.

⁶² Neve 1996a, 52-58.

⁶³ Naumann 1971, 433; Schirmer 1969, 18-22; van den Hout in this volume, pp. 73-77.

In other cities no comparable buildings have been excavated so far, but in Kuşaklı several large buildings were identified by geophysical surveys, which can surely qualify as potential candidates of buildings of an official nature.

A major building complex covering 5300 m² directly south of the Great Temple in the Lower City of Ḫattuša, the so-called Southern District (Fig. 7.1), has to be seen in connection with religious institutions. As well as storage rooms, units used as workshops or habitation quarters were found.⁶⁴ Among the sparse finds encountered here, a fragment of a clay tablet mentioning a 'house of operations' (É GIŠ.KIN.TI) has to be singled out. It contains the names of 208 members of this institution, among them priests, musicians and scribes. Thus it can be assumed that the cult personnel of the Great Temple were housed here.

Excavation has provided evidence of further types of buildings with a special function. A large building unearthed behind one of the city gates in Kuşaklı-Sarissa obviously served as stabling horses.⁶⁵ It comprises a large rectangular courtyard flanked on two opposite sides by halls, which were separated from it by rows of pillars. The horses were stabled in the halls and the personnel were accommodated in further annexe-rooms. This interpretation rests mainly on the discovery of several horse skeletons inside the building. Horses were of major importance for the Hittites, especially for drawing chariots.⁶⁶ As the training of horses was a long and complicated process, it is no wonder that horses were valuable animals and that special buildings for their accommodation should be found in Hittite cities.

The same building elements, i.e. halls which open onto a courtyard through a row of pillars, are found in the eastern building of the so-called North Complex (Fig. 6.3), situated directly south of the main gate of the royal fortress of Büyükkale.⁶⁷ The northern building of this complex is a typical vestibule house, which can be interpreted as the domestic quarters of personnel. Hitherto a cultic function for the entire complex was assumed.⁶⁸ The similarity of this complex to the structure discussed above at Sarissa, and also its position near the gates of the royal fortress, suggest that it might have been the royal stables. Unfortunately no finds to support this theory have yet been published.

In the recent excavations in the Upper City of Boğazköy-Ḫattuša several building-complexes which might shed further light on functional aspects have been painstakingly excavated.⁶⁹

⁶⁴ Naumann 1971, 460.

⁶⁵ A. Müller-Karpe 2004, 141-44.

⁶⁶ van den Hout 2004b.

⁶⁷ Neve 1996a, 49-52.

⁶⁸ Neve (1996a, 52) assumes this building to be a '*ḫalentuwa* house'.

⁶⁹ Seeher 2003; 2004; 2005.

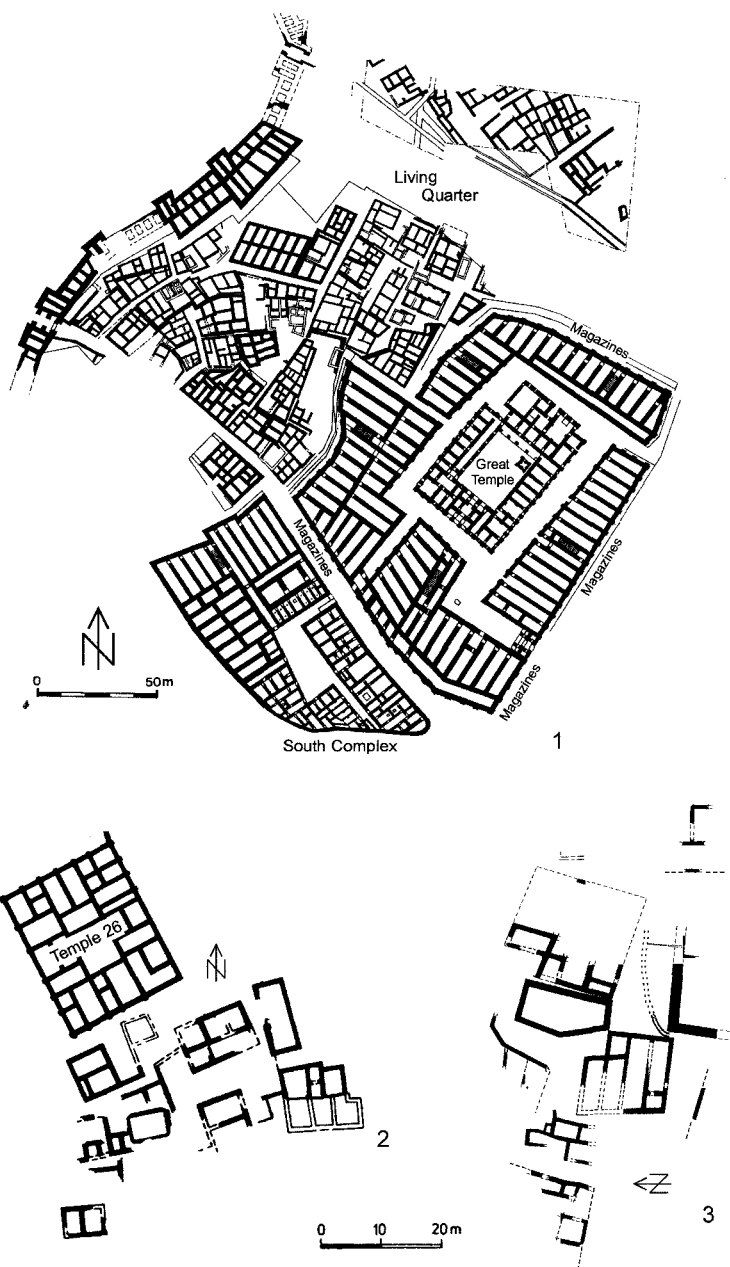


Fig. 7. Domestic quarters: (1) Boğazköy, Lower City (after H. Müller-Karpe 1980, Taf. 168 A); (2) Boğazköy, Upper City, period Ost. 2 (after Neve 1999, Beil. 42); (3) Kuşaklı, west slope, Level 2 (Kuşaklı Expedition).

A peculiarity, found so far only in the Upper City of Hattuša, is the small fortress-like structures on rock outcrops such as Yenicekale, Sarıkale (Fig. 6.6) and Nişantaş (Fig. 6.7).⁷⁰ They are generally equated with the *ḫegur* monuments (É^{NA4}*ḫegur*) known from texts, an idea which is supported by the hieroglyphic inscription at Nişantaş and its translations in cuneiform documents.⁷¹ The most plausible explanation for their function is that suggested by T.P.J. van den Hout, who states that they are royal monuments ‘that could have more than one function (mountain sanctuary, place of refuge, palatial building, but also tomb)’.⁷² The proximity of these monuments to large temples (Nos. 7, 30 and 31) seems to be more than mere coincidence. From other cities no comparable monuments are known, but the evidence from Gavurkalesi⁷³ suggests that such structures could also have been located outside cities. Thus it can be suspected that Boğazköy, where these *ḫegur* monuments are found inside the fortification in the Upper City, represents an exception, insofar as it was the capital and thus seat of the ruling dynasty. Therefore these ‘rock crest houses’ cannot be seen as a typical element of every Hittite city.

DOMESTIC QUARTERS

One of the main problems of Hittite archaeology is that hardly any domestic quarters have been investigated to date. Only in the Lower City of Boğazköy has a quarter with densely built houses and narrow lanes been excavated (Fig. 7.1); unfortunately, a detailed publication is still unavailable.⁷⁴ Through several periods of Hittite history a habitation quarter seems to have slowly developed here without any evidence of planning. Older buildings stood alongside later ones. All buildings are separate structures with no shared walls. On the other hand, the system of roads and lanes did not change substantially over time. A general change of house-types can be recognised: the courtyard house represents older buildings, whereas the vestibule house only became popular in the Empire period.⁷⁵

A different development can be observed in the temple quarter in the Upper City, where a loosely built-up quarter with smaller as well as larger buildings from the later part of the Empire period (period OSt. 2) was excavated. Sometimes these buildings cluster around temples (Fig. 7.2). The buildings are

⁷⁰ Naumann 1971, 326-29; interpreted as castles or fortified palaces. For Nişantepe, see Neve 1996a, 58-63; for Sarıkale, see Naumann 1983.

⁷¹ See van den Hout 2002 for an extensive discussion.

⁷² van den Hout 2002, 87.

⁷³ For Gavurkalesi, see Ökse in this volume, p. 232.

⁷⁴ For a short discussion of the results, see Neve 1996b, 107-10.

⁷⁵ Neve 1996b, 111.

interpreted as domestic dwellings and workshops.⁷⁶ However, in interpreting the layout of this quarter the fact that it lies on a slope and has been affected by varying degrees of erosion must be taken into account. Nevertheless, a comparable situation with loosely spaced separate building-complexes dating to an older period of occupation was also found in the western part of the Upper City during recent excavations.⁷⁷ Investigations in this area were launched specifically to explore a habitation quarter inside the city walls, as recent surveys have clearly demonstrated that no extensive habitation quarters could be expected directly outside the city (see below).

The sparse evidence from other sites seems to be comparable with the picture gleaned from the capital. At Alişar the narrow excavation trenches revealed evidence for densely built-up areas with small structures; only occasionally was a large structure encountered.⁷⁸ Also in Alaca Höyük the domestic architecture consists of smaller structures (Fig. 2). These settlements were considerably smaller than in the capital, thus the space available for building was more limited. In Kuşaklı a comparable quarter consisting of smaller structures, including one vestibule house, was investigated in a rather limited area on the western slope, Level 2 (Fig. 7.3).⁷⁹ However, as the geophysical survey has shown, other parts inside the city wall were less densely built up (Fig. 3).

To sum up, two different layouts for habitation quarters can be detected: densely built-up quarters comparable to traditional Oriental cities and areas with rather loosely spaced larger structures. It is unclear whether these two types reflect functional or social differences, or if they were dictated by the availability of building space, but the fact that the densely built-up Lower City of Hattuša belonged to the older part of the city and had already shown a similar layout during the Karum period points to the latter. The Upper City, on the other hand, was only an extension of the city, hence it offered more space for building.⁸⁰ Thus, the density of buildings in the habitation quarters seems to have been dictated by the availability of space.

THE INFRASTRUCTURE: STREETS, SQUARES, BRIDGES AND SEWERAGE SYSTEMS

In his fundamental book on the architecture of Asia Minor, Naumann states that streets during the Hittite period were usually unpaved.⁸¹ Only special areas,

⁷⁶ Neve 1999, 121-45.

⁷⁷ Seeher 2003.

⁷⁸ von der Osten 1937, 10-83.

⁷⁹ Mielke 1998.

⁸⁰ For the new dating of the Upper City, see Seeher 2006a.

⁸¹ Naumann 1971, 151.

such as passages through gates, entrance areas and courtyards, show evidence of paving. However, it is hard to imagine that frequently used roads, especially inside cities, had no kind of paving at all, as rain would have rendered these routes more or less impassable. A few excavated examples show that streets seem to have been strengthened simply with pavements of pebbles and sherds.⁸² Such simple pavements cannot easily be distinguished from fill layers, if they have survived at all. Thus the apparent lack of paved roads seems to represent something of a problem of research. Streets paved with flagstones clearly were an exception reserved for special locations. The area around the Great Temple in the Lower City of Boğazköy displays such flagstone pavements.⁸³ The court of the citadel gate on Büyükkale even shows a way paved with specially selected red flagstones.⁸⁴

Sewerage systems, a necessity due to the sometimes heavy rainfall in Anatolia, were linked directly to the streets. The channels were constructed of stone slabs and ran underneath the streets. The sewage from the individual houses was led into them through clay pipes. It is not entirely clear whether the system was unified or whether it consisted of several separate systems within a city.⁸⁵

Public squares such as the Agora in Athens or the Forum Romanum are so far unknown in the Hittite period. Nevertheless, smaller squares, for instance for market places, must surely have existed. Texts mention threshing places (KISLAḪ),⁸⁶ which are still used for a variety of public activities in the rural parts of modern-day Turkey. So far no archaeological evidence for them has come to light. From the instructions for the *BĒL MADGALTI* we know, however, that they should have been 'solidly built',⁸⁷ thus indicating some kind of special treatment.

With the exception of a bridge-like crossing of the city wall over the gorge of Büyükkaya Deresi in Ḫattuša,⁸⁸ bridges are known only from texts.⁸⁹

To sum up, archaeological evidence for these rather important elements of urban planning is meagre. The little we have tends to be a by-product of research aimed at other goals. So far no specific studies have focused on communication routes or the sewerage systems in Hittite cities.

⁸² Omura 1999, 6 with fig. 10; 1998, figs. 10 and 57.

⁸³ Naumann 1971, 151.

⁸⁴ Neve 1982, 127-28, Beil. 40.

⁸⁵ Hüser 2007.

⁸⁶ del Monte and Tischler 1978.

⁸⁷ KUB 13.2 II 18'-20' (von Schuler 1957, 45).

⁸⁸ Neve 1987.

⁸⁹ Otten 1983a.

STORAGE INSTALLATIONS

One of the most important outcomes of recent research is the discovery of installations indicative of a highly developed system of resource management in the Hittite period for securing the basic needs of the population.⁹⁰ First of all, there are large grain silos, probably owned and controlled by the state (Fig. 8.2). These were generally situated in high, dry places. In Boğazköy a number of silo pits or granaries were detected, which confirm the existence of such installations throughout the Hittite period.⁹¹ As well as silo pits with a capacity ranging from 80 to 400 tons of grain, a large granary on the north-west slope had a capacity of about 5000 tons.⁹² To get some idea of the dimensions of grain storage one has to keep in mind that with a daily ration of 500 g per person 100 tons of grain is sufficient to supply 547 people for an entire year.⁹³ A silo of a somewhat different type of construction with a capacity of 720 tons was discovered in Kuşaklı (Fig. 8.1).⁹⁴ This is semi-subterranean, with the upper part consisting of a massive earthen rampart. Several other large silo pits have been discovered at Alaca Höyük, Kaman Kalehöyük and İnandıktepe.⁹⁵

All of these installations function according to the same principle, which is the storage of grain under oxygen-free conditions. This method is still in wide use nowadays in non-industrialised regions.⁹⁶ The silo was filled with grain and then covered with a thick layer of soil. The grain used up the existing oxygen in the silo and produced carbon dioxide instead, which is lethal for any kind of pests. By this method large amounts of grain could be stored for several years. These storage installations are also mentioned in texts with the term ÉSAG (previously read ARÀḪ).⁹⁷ They were used as central stores from which to supply large military units, or the population in times of famine. High officials were responsible for their administration and supervision.⁹⁸

⁹⁰ For a short overview, see Mielke 2002.

⁹¹ Seeher 2000.

⁹² Seeher 2006c.

⁹³ For an overview on the capacities of Hittite granaries, see the table in Mielke 2001, 241.

⁹⁴ Mielke 2001. Recent excavations also testified to the existence of silo pits on the acropolis of Kuşaklı.

⁹⁵ Alaca Höyük: Çınaroğlu and Genç 2003, 280-81. Kaman Kalehöyük: Omura 2001, 11-27; 2002, 6-19; Fairbairn and Omura 2005. İnandıktepe: Özgüç 1988, 74. This silo pit can be attributed to Level III and has a diameter of approximately 5.5 m and a depth of 10.40 m (the value for the depth is doubtful). Walls and floor were lined with stones. In the publication the silo is called 'refuse pit'.

⁹⁶ For a detailed description, see Seeher 2000.

⁹⁷ Hoffner 2001, 207-09; 1974, 34-37.

⁹⁸ Hoffner 2001, 207-08; Imparati 2002, 99-100.

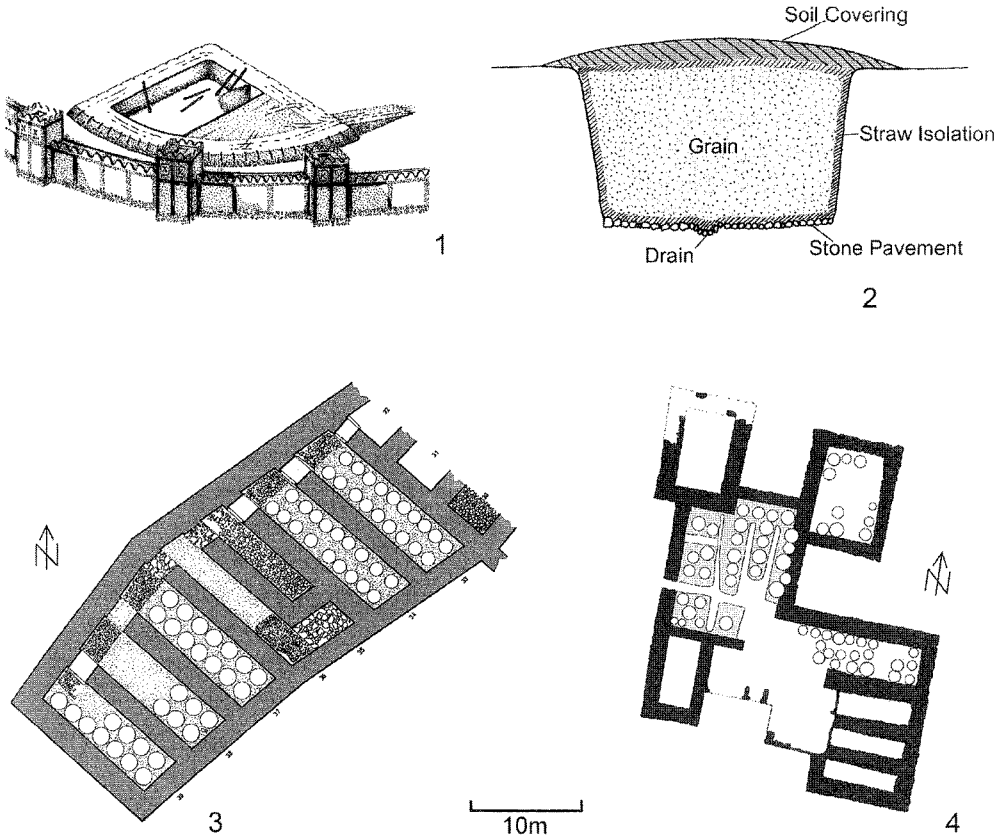


Fig. 8. Storage installations and magazines: (1) Kuşaklı, reconstruction drawing of the granary at the south point (Kuşaklı Expedition; drawing: M. Ober); (2) Boğazköy, ideal drawing of a silo pit (drawing: D.P. Mielke); (3) Boğazköy, magazine rooms with pithoi in the lower city (after Neve 1969, Abb. 3); (4) Ortaköy, Building B, magazine with pithoi installations (after M. Süel 2001, 681).

For short- or medium-term storage of provisions other types of storerooms existed, such as those around the Great Temple in Boğazköy (Fig. 7.1).⁹⁹ Several rooms contained large pithoi with a capacity of up to 1750 litres (Fig. 8.3). Ortaköy-Şapinuwa provide another example of a storage building with long rows of built-in pithoi (Fig. 8.4).¹⁰⁰ In many other official buildings single rooms

⁹⁹ Neve 1969.

¹⁰⁰ M. Süel 2001; A. Süel 1998, 41-42 with plan 2 and resim 7-11; 2002, 163 with fig. 5.

with storage jars or storage bins came to light.¹⁰¹ It is often difficult to establish who was in actual control of these supplies. The storages around the Great Temple in Boğazköy are often assumed to have belonged to the temple itself. However, the capacity of these stores greatly exceeded the needs of the temple. Furthermore, royal and religious administration cannot be clearly separated in the Hittite period. Thus the temple storages should best be seen as part of the royal storage system. Seal-houses (É^{NA4}KIŠIB) belonging to the state, namely the Great King, and controlled by special officials (LÚAGRIG) were also situated in other cities of the empire.¹⁰² They also formed part of the official administrative and distributive system.

A fundamental necessity for the emergence and existence of cities is the supply of fresh water for the inhabitants.¹⁰³ With the help of clay pipes the Hittites brought water from the mountains into the cities. It is not yet clear how these pipelines actually ended, but public fountains in central places of the cities have to be assumed to be the most likely. For irrigation purposes, as well as for watering the cattle, water was stored in ponds. According to varying topographical conditions different solutions were sought. On a plateau in the Upper City of Boğazköy several ponds were dug into the virgin soil in one of the highest parts of the city (Fig. 1), whereas in front of the city walls of Kuşaklı several water-storage dams, testimony to the excellent technical knowledge of Hittite engineers, were recently explored (Fig. 3).¹⁰⁴

FORTIFICATIONS

Fortifications are a characteristic element of almost all major Hittite cities. Hittite fortifications show some common features.¹⁰⁵ Typical are projecting rectangular towers spaced at short intervals (Fig. 9.6-7). The area between the towers was closed with two parallel walls, subdivided into box-like structures by perpendicular walls. Filled with rubble, these boxes formed a massive solid wall.¹⁰⁶ The width of these casemate walls varied from 3.5 m (Kuşaklı) to nearly 8 m (Boğazköy, Postern Wall). No secure information on height is available. According to clay models the towers were higher than the actual walls; walls and towers had battlements with rounded crenellations (Fig. 4.4).

¹⁰¹ Kuşaklı: A. Müller-Karpe 1998, 101-02 and Abb. 6; Maşat Höyük: Özgüç 1982, 76-79 and pl. 12.

¹⁰² Goetze 1957, 109; Singer 1984.

¹⁰³ An extensive discussion is provided by Hüser 2007.

¹⁰⁴ Hüser 2004.

¹⁰⁵ Naumann 1971, 252-56.

¹⁰⁶ The use of these boxes as casemate rooms (Naumann 1971, 254, 309-10) is rather unlikely, as the walls would have been too thin to offer effective protection.

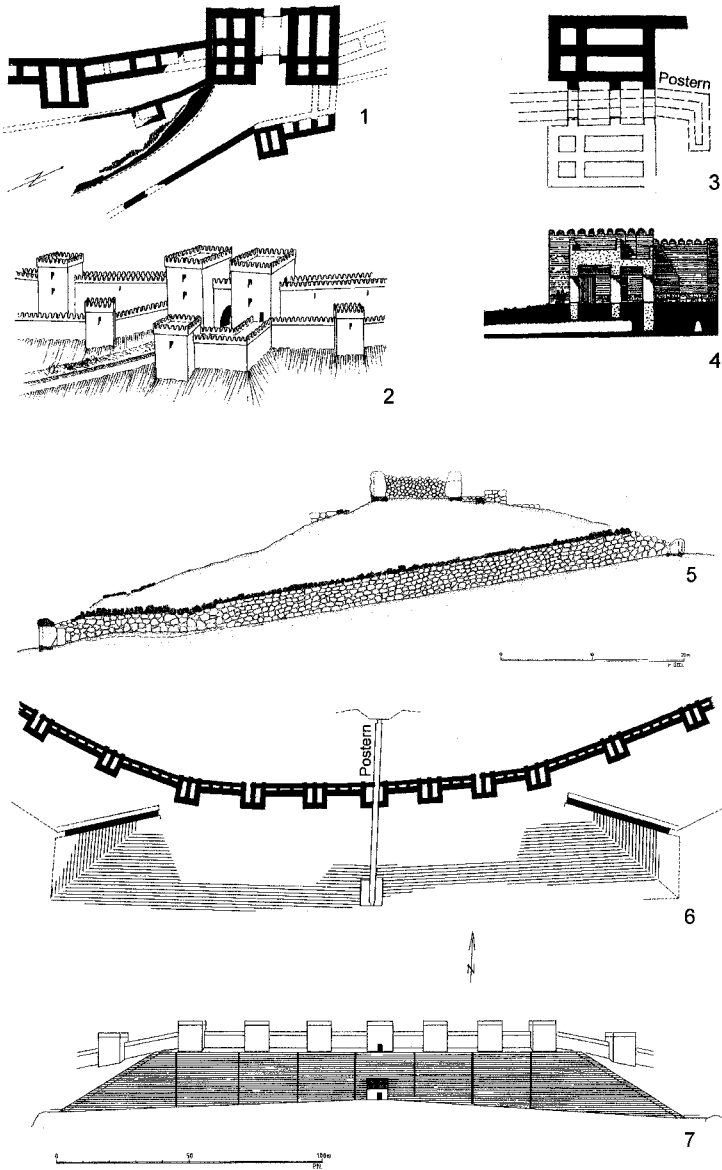


Fig. 9. Fortification elements: (1) Boğazköy, King's gate (after Schirmer 2002, Abb. 5); (2) Boğazköy, reconstruction drawing of the King's gate (after Schirmer 2002, Abb. 4); (3-4) Alaca Höyük, postern gate, and reconstruction of section of postern gate (after Koşay and Akok 1966, Lev. 89); (5) Boğazköy, Yerkapı, section of the postern (after Neve 2001, Beil. 2); (6) Boğazköy, Yerkapı, map of the fortification system (after Neve 2001, Abb. 3a); (7) Reconstruction drawing of Yerkapı (after Neve 2001, Abb. 3b).

To protect the actual walls from battering rams and other siege engines the fortifications were usually erected on an earthen rampart. The walls themselves consisted of mud bricks on a stone foundation. Dowel holes in the stone foundations as well as traces of burning demonstrate the use of wood in the walls as well. Especially for the battlements and the upper parts of the towers large amounts of wood seem to have been used. This is shown not only by the ceramic models but also by regulations from texts which ban the storage of firewood or torches and the lightning of fire on the fortifications.¹⁰⁷

For our ideas about fortifications a new project in Boğazköy, initiated by J. Seeher, is of prime importance: a part of the city wall in the Lower City was reconstructed, to clarify not only questions concerning the actual construction but also to investigate the durability of mudbrick walls and the amount of maintenance they required in the rough Anatolian climate.¹⁰⁸

Central elements of the fortifications were the gates, which in case of attack were prime targets. This is exemplified by a text relating to the military campaigns of the Great King Ḫattušili I: 'And I marched against Ḫaḫḫa and three times made battle within the gates. And I destroyed Ḫaḫḫa...'.¹⁰⁹ Accordingly, the city gates were especially secured. The actual passage was always flanked by two massive towers, much larger than the ordinary towers along the city wall (Fig. 9.1-4). The doorway consisted of one or two chambers. A pair of heavy wooden doors closed the gates. The only remains are the door sockets as well as bolt-holes in the walls. A written document recounts that it was one of the duties of the *HAZANNU* (see below) to close the doors at night with copper door bolts and to seal them. In the morning the seals were checked for intactness; only then were the doors opened again.¹¹⁰ The only archaeological confirmation of the practice of sealing the doors at night comes from a seal impression from the south-eastern gate of Kuşaklı.¹¹¹

Excavation of another gate at Kuşaklı, the north-west gate, has provided the first evidence for the use of the rooms in the gate towers thanks to the excellent state of preservation.¹¹² The inventory as well as fittings such as a hearth found here clearly shows that guards were permanently accommodated in these rooms. According to one theory the gates served as separate small fortresses: supposedly they had doors on the outside as well as the inside, thus could be

¹⁰⁷ Boysan-Dietrich 1987, 18.

¹⁰⁸ Seeher 2004, 73-75; 2005, 72-74; 2006b.

¹⁰⁹ KBo 10.2 III 6'-8' (CTH 4). Translation after Bryce 1982, 54. Although Ḫaḫḫa is located in North Syria, this does not diminish the importance of the text reference.

¹¹⁰ Otten 1963, 92-93.

¹¹¹ Schachner 1999, 77-78.

¹¹² Mielke 2004a; 2004b; 2006b.

defended in all directions.¹¹³ The evidence from the north-west gate in Kuşaklı clearly disproves this idea. Not only was evidence for a pair of doors on the inner side of the gate lacking but the doors and larger windows in the rooms of the tower facing towards the city were incompatible with the idea of a separate fortress.

Concerning the defence of the gates another feature should be mentioned: sometimes the approach way to the gate from the outside lay partly alongside the city walls, from where potential attackers could be fired upon. This layout is particularly evident at the King's Gate in Boğazköy (Fig. 9.1).¹¹⁴ Several other gates, however, had direct approaches, leading over arches.¹¹⁵

Some gates were adorned with reliefs, for instance at Alaca Höyük, in the Upper City of Boğazköy and at Ortaköy, which has led to the suggestion that these gates may have had a cultic function as well. Unique is a hieroglyphic inscription at the Lion's Gate in Boğazköy. Although the complete reading of it remains insecure, the sign for gate (L. 239) is clearly visible; thus it can be suspected that the inscription gives the name of the gate.¹¹⁶ Other buildings in the capital carried the remains of inscriptions as well, but these are even less well preserved. However, it can be concluded that the Hittites had specific names for their more important buildings, just as we have nowadays.

Textual references to fortifications are rare. Often a text attributed to the Great King Ḫantili I is quoted, in which a possible reference to the erection of the city wall in Ḫattuša is made:¹¹⁷ 'Fortified cities in the land of Ḫatti nobody built in former times, in the whole country now I, Ḫantili, built fortified cities, Ḫattuša, too, I, Ḫantili, built/fortified.' The text is heavily restored and is not entirely clear, especially the passage concerning the fortifications of Ḫattuša.¹¹⁸ Bittel doubted that this passage referred to the actual first erection of a city wall in the capital.¹¹⁹ Rather more important is the first part of this text, as it refers to the systematic settlement policy of the Hittite kings.

¹¹³ Naumann 1971, 279.

¹¹⁴ Naumann 1971, Abb. 369. A similar approach is also assumed for the south-west gate in Kuşaklı (A. Müller-Karpe 1997, 137).

¹¹⁵ This is the case for the approach to the palace on Büyükkale (Neve 1996a, 47-49). Also outside the south-east gate at Kuşaklı the presence of an arched way was suggested by geophysical surveys (A. Müller-Karpe 1998, 152).

¹¹⁶ Neve 1976; Börker-Klähn 1983. Names of further gates are known from various texts, but have not been studied in detail yet.

¹¹⁷ BoTU 20 III 12'-18' = KBo 3.57. See also Neu 1974, 30; Klengel 1999, 68 [A1] and n. 162; Börker-Klähn 1983, 88.

¹¹⁸ See Klinger 2006, 6-7.

¹¹⁹ Bittel 1983, 28.

A further possible reference to fortifications may be found in the so-called 'Kaššu-letter', addressed to a Great King, in which the inspection and repair of damaged fortifications is mentioned.¹²⁰ However, the entire interpretation of this text is quite insecure. It could equally refer to a situation in connection with an attack on a fortress.¹²¹

A peculiarity of Hittite fortifications is the so-called postern, although these are not attested at every site.¹²² They are subterranean passages constructed in the technique of a false vault, leading through the earthen ramparts on which the walls were erected (Fig. 9.5). Some of them are even positioned directly under gates (Fig. 9.3-4). So far exceptional is the so-called postern wall in Boğazköy, which encompasses the entire Lower City as well as the hill of Büyükkaya.¹²³ Here the posterns are positioned at regular intervals. Outside Anatolia the only comparable construction known is from Ugarit in Syria, and this is seen as betraying Hittite influence.¹²⁴ Apart from technical similarities the postern in Ugarit is quite different: it is situated next to a gate, whilst Hittite posterns always lead through the earthen ramparts below the fortification walls. In general the posterns are considered to be sally ports for use in times of siege. Apart from that, they were also used in everyday life to facilitate entering and leaving the city. It should be pointed out that a convincing explanation of the use of these structures is still lacking.

URBAN ASPECTS OF HITTITE CITIES

Besides these visible elements the general structures underlying Hittite urban settlements have to be considered, though it has to be pointed out that the data for such a study is extremely limited.

SETTLEMENT STRUCTURE AND CITY PLANNING

A rough structure for Hittite cities is provided by the fact that important buildings are generally situated in prominent topographical positions. This is especially true for temples and palaces. The latter are often positioned on a central

¹²⁰ KBo 18.54; see also Bittel 1983, 68; Neve 1966, Abb. 3.

¹²¹ Hagenbuchner 1989, 58-63, no. 40.

¹²² Naumann 1971, 302-04; Miglus 2005; for the construction technique, see Naumann 1971, 124-29. Posterns have so far been found in Boğazköy, Alışar, Alaca Höyük, Külhöyük and Oymaağaç.

¹²³ Naumann 1971, 304.

¹²⁴ Yon 1997, 41, figs. 16 and 18; Naumann 1971, 302-04.

elevation and surrounded by separate fortifications, as in Boğazköy (Büyükkale) or Alişar. As to the general aspects of city planning, it seems clear that most structures were positioned according to functional needs and topographical conditions. An exception is the Upper City of Hattuša, which was a planned extension to the original city (Fig. 1). Its symmetrical layout, particularly noticeable in the course of the city wall between the Lion's and the King's Gates, betrays some element of planning. Neve envisaged a religious concept behind this.¹²⁵ The rock outcrop of Nişantepe supposedly served as a focal point at which the axes running through all three gates of the Upper City met. However, a new topographical survey of Boğazköy reveals this to be false.¹²⁶ Furthermore, Neve reconstructed a processional road leading around the Upper City outside the fortifications. These theories notwithstanding, the Upper City clearly shows evidence of some kind of planning along certain axes.

Sarissa, a city newly founded at the end of the 16th century BC, shows similar principles.¹²⁷ The foundation of this city has to be seen in the context of an active settlement policy pursued by Hittite kings, which necessitated some planning of the resultant new settlements. The planning axes even seem to incorporate the mountain sanctuary situated at a distance of 2 km from the city. However, the focal points of the axes remain unclear. Even here they served only for a general orientation – the actual orientations of many of the buildings follow functional and topographic needs instead.

SIZE AND POPULATION

Urban sites are often classified according to size,¹²⁸ but this criterion is difficult to use for Hittite cities. In most cases their exact extent is unknown or can be determined but vaguely. There are some few cities whose precise size can be established from still-visible fortifications. Boğazköy is by far the largest site at 181 ha; others such as Kuşaklı (18 ha), Alişar (18 ha) and Alaca Höyük (5 ha) are considerably smaller. The area of 9 km² given for Ortaköy-Şapinuwa is clearly exaggerated: this would be five-and-a-half times larger than the capital.¹²⁹ With the evidence to hand so far no standardised sizes of settlements can be recognised.

¹²⁵ For a general overview on the Upper City, see Neve 1996a; 1999. For the concept, see Neve 1996a, 21-22, Abb. 44; 1999, 9-10, Abb. 6.

¹²⁶ Seeher 1999.

¹²⁷ A. Müller-Karpe 2002, 179.

¹²⁸ Bartl 1997, 268, 270-72.

¹²⁹ A. Süel 2002, 165. So far these statements have not been substantiated.

Directly connected to size is the question of population. For Ғattuša Bittel originally assumed 15,000-20,000 inhabitants.¹³⁰ Using admittedly hypothetical calculations C. Mora arrived at a figure of between 9000 and 11,000.¹³¹ Later on Bittel more cautiously suggested 9000 to 15,000, but still admitted that this was highly speculative until more information was available on population density and especially the function of the different quarters of the city.¹³² For Sarissa A. Müller-Karpe assumed about 5000 inhabitants, based upon the capacity of the granary.¹³³ Given the rather small size of the settlement this seems somewhat exaggerated. Furthermore, there is no clear evidence that the granary was used only to supply the city's population (see above).¹³⁴ S. Alp tried to establish the number of inhabitants of a Hittite city through textual sources.¹³⁵ From these he assumed the size of the average family to be 8 to 10 persons. One particular text (HKM 10) seemed to indicate that the population of the city of Lišipra consisted of 300 families, which would result in a total of 2400-3000 inhabitants. Unfortunately, little else is known about this city, either from texts or from archaeological sources. Alp assumed that it was a medium-sized city. But it remains unclear with what kind of city known from archaeological sources a medium-sized city could be equated. In summary, the statement of Bittel remains valid. Even for sites which have been excavated more extensively, such as Boğazköy or Kuşaklı, a realistic estimate of the number of inhabitants cannot be given yet.

TOPOGRAPHICAL POSITION AND HINTERLANDS OF CITIES

The topographical situation of Hittite cities has received contradictory interpretations, especially the capital. It seems clear that there is no standardised layout. The size of the cities has to be considered as well as their possible functions. Smaller sites situated along communication routes through valleys obviously had a strategic function.¹³⁶ Cities such as Ғattuša or Sarissa are characterised by a peripheral position in larger valleys, where mountain passes reach the plains.¹³⁷ Sites placed on important communication routes were occupied throughout time, thus it is no wonder that Hittite settlements here were established on the previously existing höyüks, as is the case for Kayalıpınar.¹³⁸ It is more difficult

¹³⁰ Bittel and Naumann 1952, 26 n. 16.

¹³¹ Mora 1977, 236.

¹³² Bittel 1983, 85.

¹³³ A. Müller-Karpe 2002, 182.

¹³⁴ See the remarks by Seeher 2000, 295.

¹³⁵ Alp 1991, 119.

¹³⁶ Ökse 2000, 107.

¹³⁷ See Bittel 1983, Abb. 10; A. Müller-Karpe 1998, Abb. 13.

¹³⁸ Ökse 2000, 91-92.

to assess the situation of Ortaköy, since the size of the site is not yet known and no detailed topographical plans have been published.¹³⁹ A systematic study of the topographical positions of Hittite cities with respect to the geographic characteristics of the Anatolian highlands is still lacking.

Only in the past few years have the immediate surroundings of cities been studied. During a survey focused on the regional history of Boğazköy an area of 10 km around the city was intensively investigated.¹⁴⁰ It came as a surprise that no evidence of a denser settlement beyond the city walls was found.

In Kuşaklı-Sarissa surveys of the surroundings were undertaken simultaneously with the excavations.¹⁴¹ Thus a sanctuary was discovered in the mountains above the city, mentioned moreover in textual sources discovered on the site. The direct surroundings of the city provided evidence for at least a loosely built-up outer town, which was investigated by means of field-walking, geophysical surveys and small test trenches.¹⁴²

ORGANISATION AND ADMINISTRATION

Relations between the different settlements are known mainly from textual sources, as has already been indicated in the discussion concerning the palaces. Important information is gleaned from texts concerning the duties of officials.¹⁴³ Most important for this point is the *BĒL MADGALTI*, who served as a governor in border regions and exercised control over an entire district, as shown by a list of his duties: ‘...all the residential palaces, administrative “palaces”, and houses of lordship that are in your administrative district...’.¹⁴⁴ Several cities seem to have been ruled and administered by local dynasties, which is indicated by the designation ‘Lord of the city xx’ (EN/*BĒL* ^{URU}xx).¹⁴⁵ The lords sometimes appear to have designated themselves as kings, as in Sarissa.¹⁴⁶ Officials termed ^{LU}MASKIM.URU^{KI} seem to have played an important role in the administration of communities. This term apparently designates a magistrate or an inspector for larger as well as smaller settlements. For the capital Hattuša such an official is attested too.¹⁴⁷ Lastly the *HAZANNU* has to

¹³⁹ For the problem of the assumed size of 9 km², see the previous subsection. The only plan published so far is found in A. Süel 2002, fig. 3.

¹⁴⁰ The project was directed by R. Czichon. Preliminary reports were published in *MDOG* (Czichon 1997; 1998; 1999).

¹⁴¹ A. Müller-Karpe 1997, 118-20; 1998, 108-12; 1999, 79-96.

¹⁴² A. Müller-Karpe 1998, 144-60; 1999, 105-06; 2001, 243-49.

¹⁴³ For the following, see Imparati 1999 (with further references).

¹⁴⁴ KUB 13.2 IV 13'-14' (von Schuler 1957, 51).

¹⁴⁵ Siegelová 2001, 195 n. 16.

¹⁴⁶ Wilhelm 1997, 10.

¹⁴⁷ Otten 1963, 94.

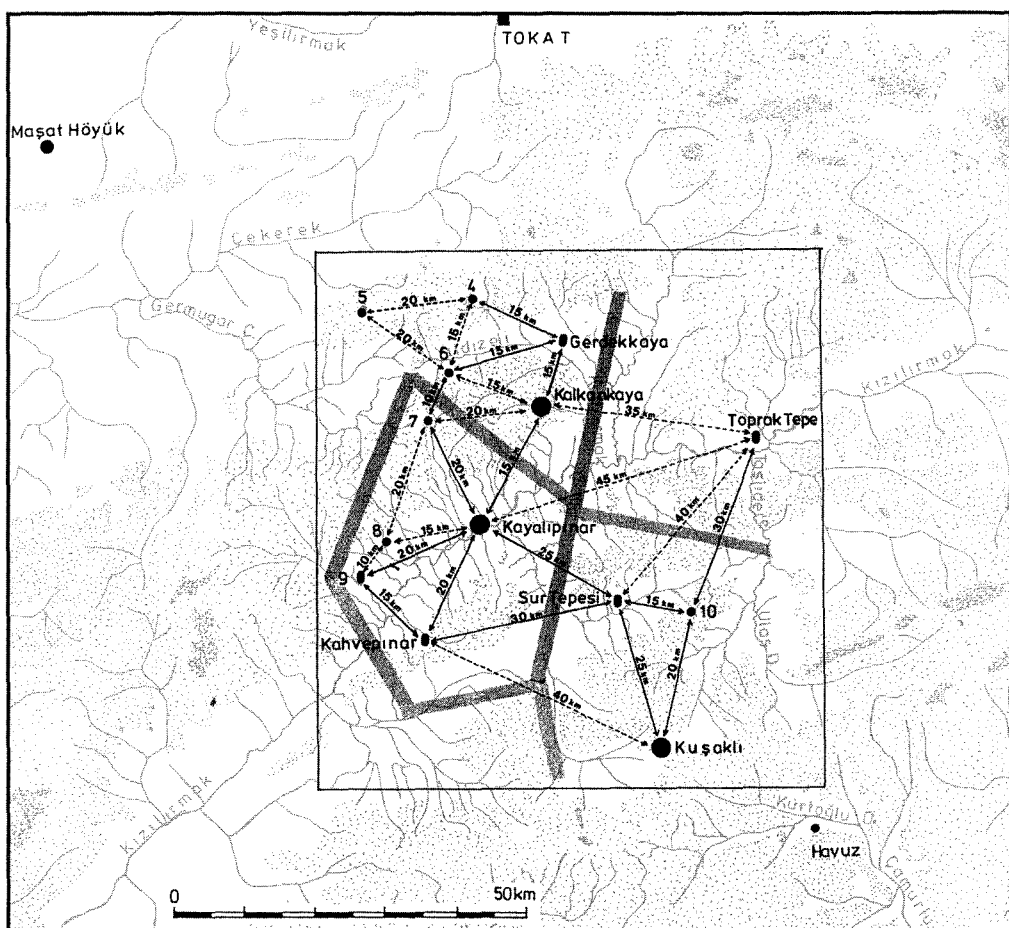


Fig. 10. Hypothetical routes and territorial borders in the upper Kızılırmak region according to A.T. Ökse (after Ökse 2000, Abb. 2, 14).

be mentioned.¹⁴⁸ This term is often translated as mayor, but according to the texts this official had an executive rather than a leading position. While some further dispersed information may be found, the actual information concerning the administration and organisation of Hittite cities is severely limited.

Hints of administrative structures can also be detected in the archaeological record, as A. Tuba Ökse has demonstrated by her survey in the upper Kızılırmak

¹⁴⁸ See the summary by Otten 1983b, 48-52.

region (Fig. 10).¹⁴⁹ A severe limitation on connecting archaeological and philological research on this topic is posed by the fact that very few toponyms can be securely connected with archaeological sites.

THE HITTITE CONCEPT OF 'CITY' – A FIRST APPROACH

The question of whether there existed a specific Hittite concept of the city, reflecting the social and political structures, cannot be answered definitely with the sources available. However, at least some tendencies become apparent. The investigation of the specific urban elements as well as the general urban structures has demonstrated that Hittite cities were deeply influenced by administrative and religious parameters.¹⁵⁰ Domestic structures and public squares seem to have played a minor role; they are not a typical feature of city planning. According to the socio-political structures, separation between state and religion did not exist in the Hittite world.¹⁵¹ As a reminder, the close relation of temple and palace architecture may be noted. Settlements can instead be differentiated according to their position in the administrative hierarchy, as gleaned from both textual and archaeological evidence, whereas the actual terms used for settlements do not show a differentiation between different kinds and sizes of settlement. As no investigations of villages and hamlets have yet been undertaken, it is impossible to determine which elements actually are characteristic of cities. The few sites which have been investigated up to now do fulfil modern criteria for urban settlements, such as a certain size, a densely built-up area encircled by a fortification, quarters with different functions and lastly a central position in the administrative and cultic system. And other urban elements such as roads, water supply and sewage systems are present. In detail, however, Hittite cities show several characteristics that distinguish them from contemporaneous settlements in other regions. This becomes apparent in the specific architectural as well as conceptual layout of the palaces, temples, fortifications and storage installations. This special character is certainly of Anatolian origin and can be traced back at least to the palace culture of the Karum period.¹⁵² In that period also the roots of the Hittite state have to be sought, which very likely began with the royal dynasty of Kuššar.¹⁵³ The Hittite

¹⁴⁹ Ökse 2000.

¹⁵⁰ Generally only the cultic character of Hittite cities is stressed (see Hawkins 1998).

¹⁵¹ This has clearly been worked out by Imparati 1999.

¹⁵² For the Karum period, see Özgüç 2003.

¹⁵³ For the later Karum period Pithana and his son Anitta are known from Kuššar. Also Hattušili I termed himself as a 'man of Kuššar', but Klengel (1999, 36) points out that so far no direct connections between Hattušili and the earlier kings of Kuššar can be established.

state with its specific socio-political structures is thus reflected in the structure of its cities. It is no wonder that in the succeeding Iron Age of Central Anatolia this concept of city finds no continuation: the socio-political conditions also had changed.¹⁵⁴ A certain continuity of these Hittite cultural achievements is noticeable in south-eastern Anatolia. However, the Neo-Hittite states there and in northern Syria clearly show that structures created by humans – such as cities – are not fixed reflections of the respective societies that created them, but are subjected to various influences.¹⁵⁵ This can best be illustrated with the Neo-Hittite gate complexes which, while exhibiting certain traditions going back to the Late Bronze Age constructions, receive a new meaning in the context of a differently structured society.¹⁵⁶ Here, however, a different field of research is reached.

BIBLIOGRAPHY

- Alp, S. 1991: *Hethitische Briefe aus Maşat Höyük (TTKY VI.35)* (Ankara).
 — 1993: 'Der Palast in den Maşat-Briefen'. In Mellink *et al.* 1993, 15-22.
 Bartl, K. 1997: 'Zentralanatolische Stadtanlagen von der Spätbronzezeit bis zur mittleren Eisenzeit. Kontinuität – Wandel – Bruch?'. In Wilhelm, G. (ed.), *Die orientalische Stadt: Kontinuität, Wandel, Bruch 1* (Internationales Colloquium der Deutschen Orient-Gesellschaft, 9.-10. Mai 1996 in Halle/Saale) (*CDOG* 1) (Saarbrücken), 267-88.
 Bittel, K. 1976: *Die Hethiter* (Munich).
 — 1983: *Hattuscha. Hauptstadt der Hethiter. Geschichte und Kultur einer altorientalischen Großmacht* (Cologne).
 Bittel, K. and Naumann, R. 1952: *Boğazköy-Hattuša I. Architektur, Topographie, Landeskunde und Siedlungsgeschichte* (Stuttgart).
 Börker-Klähn, J. 1983: 'Hattušas Stadttore und ihre Benennung'. In Boehmer, R.M. and Hauptmann, H. (eds.), *Beiträge zur Altertumskunde Kleinasiens. Festschrift für Kurt Bittel* (Mainz), 83-103.
 Boysan-Dietrich, N. 1987: *Das hethitische Lehmhaus aus der Sicht der Keilschriftquellen (THeth 12)* (Heidelberg).
 Bryce, T.R. 1982: *The Major Historical Texts of Early Hittite History* (St Lucia, Qld).
 Çınaroğlu, A. and Genç, E. 2003: 'Alaca Höyük ve Alaca Höyük hittit barajı kazıları, 2002'. *KST* 25.1, 279-88.
 Czichon, R.M. 1997: 'Studien zur Regionalgeschichte von Hattuša/Boğazköy 1996'. *MDOG* 129, 89-102.
 — 1998: 'Studien zur Regionalgeschichte von Hattuša/Boğazköy 1997'. *MDOG* 130, 83-92.

¹⁵⁴ Thus also Neve 1982, 141.

¹⁵⁵ Cf. also Giddens 1979; 1984.

¹⁵⁶ This is especially clear in the way how sculptures were incorporated. See Voss 1988.

- 1999: 'Studien zur Regionalgeschichte von Hattuša/Boğazköy 1998'. *MDOG* 131, 47-56.
- Darga, M. 1971: 'Die Architektur der hethitischen Städte und Befestigungsanlagen'. *RHA* 29, 17-60.
- del Monte, G.F. 1992: *Die Orts- und Gewässernamen der hethitischen Texte. Supplement* (Répertoire géographique des textes cuneiformes 6.2) (*TAVO Beiheft B7.6*) (Wiesbaden).
- del Monte, G.F. and Tischler, J. 1978: *Die Orts- und Gewässernamen der hethitischen Texte* (Répertoire géographique des textes cuneiformes 6) (*TAVO Beiheft B7*) (Wiesbaden).
- Die Hethiter und ihr Reich* 2002: *Die Hethiter und ihr Reich. Das Volk der 1000 Götter* (Bonn).
- Diñol, A. 1996: "'Settlement" and "House" in Ancient Anatolian Languages'. In Sey, Y. (ed.), *Tarihten günümüze Anadolu'da konut ve yerleşme/Housing and Settlement in Anatolia. A Historical Perspective* (Istanbul), 116-21.
- Fairbairn, A. and Omura, S. 2005: 'Archaeological Identification and Significance of ÉSAG (Agricultural Storage Pits) at Kaman-Kalehöyük, Central Anatolia'. *AS* 55, 15-23.
- Friedrich J. and Kammenhuber, A. 1991: *Hethitisches Wörterbuch*, 2nd ed. III. Lieferung 11: H (Heidelberg).
- Friedrich, J., Kammenhuber, A. and Hoffmann, I. 2000: *Hethitisches Wörterbuch*, 2nd ed. III. Lieferung 14: H (Heidelberg).
- Giddens, A. 1979: *Central Problems in Social Theory. Action Structure and Contradictions in Social Analysis* (Berkeley).
- 1984: *The Constitution of Society: Outline of the Theory of Structuration* (Cambridge).
- Goldmann, H. 1956: *Excavations at Gözlükule, Tarsus. II. From the Neolithic through the Bronze Age* (Princeton).
- Goetze, A. 1957: *Kulturgeschichte Kleinasien* (Handbuch der Altertumswissenschaft III.2), 2nd ed. (Munich).
- Gurney, O.R. 1992: 'Hittite Geography: Thirty Years on'. In Akurgal, E., Ertem, H., Otten, H. and Süel, A. (eds.), *Hittite and Other Anatolian and Near Eastern Studies in Honour of Sedat Alp* (Ankara), 213-21.
- Güterbock, H.G. 1974: 'The Hittite Palace'. In Garelli, P. (ed.), *Le Palais et la Royauté (Archéologie et Civilisation)* (XIX Rencontre Assyriologique Internationale) (Paris), 305-14.
- Güterbock, H.G. and van den Hout, T.P.J. 1991: *The Hittite Instruction for the Royal Bodyguard* (Assyriological Studies 24) (Chicago).
- Haas, V. and Wäfler, M. 1973-74: 'Bemerkungen zum É. *halentu(wa)-*'. *IstMitt* 23-24, 1-31.
- 1977: 'Zur Topographie von Hattuša und Umgebung I'. *OrAnt* 16, 227-38.
- Hagenbuchner, A. 1989: *Die Korrespondenz der Hethiter. 2. Teil. Die Briefe mit Transkription, Übersetzung und Kommentar* (Heidelberg).
- Hawkins, J.D. 1998: 'Hattusa: Home to the Thousand Gods of Hatti'. In Westenholz, J.G. (ed.), *Capital Cities: Urban Planning and Spiritual Dimensions* (Proceedings of the Symposium held on May 27-29, 1996, Jerusalem, Israel) (Jerusalem), 65-82.
- Hoffner, H.A. jr 1974: *Alimenta Hethaeorum. Food production in Hittite Asia Minor* (American Oriental Series 55) (New Haven).

- 2001: 'Alimenta Revisited'. In Wilhelm, G. (ed.), *Akten des IV. Internationalen Kongresses für Hethitologie, Würzburg, 4.-8. Oktober 1999 (StBoT 45)* (Wiesbaden), 199-212.
- Hüser, A. 2004: 'Untersuchungen am Nordwest-Damm'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 2003'. *MDOG* 136, 158-62.
- 2007: *Hethitische Anlagen zur Wasserversorgung und Entsorgung* (Kuşaklı-Sarissa 3) (Rahden, Westphalia).
- Imparati, F. 1999: 'Die Organisation des hethitischen Staates'. In Klengel 1999, 320-87.
- 2002: 'Palaces and local communities in some Hittite provincial seats'. In Yener and Hoffner 2002, 93-100.
- Jakob-Rost, L. 1965: 'Beiträge zum hethitischen Hofzeremoniell (IBoT I 36)'. *MIO* XI, 165-225.
- Klengel, H. 1999: *Geschichte des Hethitischen Reiches (HdO Abteilung 1.34)* (Leiden/Boston/Cologne).
- Klinger, J. 2006: 'Der Beitrag der Textfunde zur Archäologiegeschichte der hethitischen Hauptstadt'. In Mielke *et al.* 2006, 5-18.
- Koşay, H.Z. and Akok, M. 1966: *Alaca Höyük Kazısı. 1940-1948 deki çalışmalara ve keşiflere ait ilk rapor/Ausgrabungen von Alaca Höyük. Vorbericht über die Forschungen und Entdeckungen von 1940-48 (TTKY V.6)* (Ankara).
- 1973: *Alaca Höyük Kazısı. 1963-1967 çalışmaları ve keşiflere ait ilk rapor/Alaca Höyük Excavations. Preliminary Report on Research and Discoveries 1963-1967 (TTKY V.28)* (Ankara).
- Lebrun, R. 1976: *Samuha. Foyer religieux de l'Empire Hittite* (Louvain-La-Neuve).
- Lichtenbergér, E. 2002: *Die Stadt. Von der Polis zur Metropolis* (Darmstadt).
- Masson, E. 1995: 'La ville hittite'. *Semitica* 43-44, 63-66.
- Mellaart, J. 1993: 'The Present State of "Hittite Geography"'. In Mellink *et al.* 1993, 414-22.
- Mellink, M., Porada, E. and Özgüç, T. (eds.) 1993: *Aspects of Art and Iconography: Anatolia and its Neighbors. Studies in Honor of Nimet Özgüç* (Ankara).
- Meyer, J.-W. 1995: 'Ergänzende Bemerkungen zur Topographie von Hattuša'. *AoF* 22, 1, 125-36.
- Mielke, D.P. 1998: 'Die Nachuntersuchungen am Westhang'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 1997'. *MDOG* 130, 120-29.
- 2001: 'Die Grabungen an der Südspitze'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 2000'. *MDOG* 133, 237-43.
- 2002: 'Leg Ihnen Brot in die Hand... [Zum Wirtschaftssystem der Hethiter]'. *Archäologie in Deutschland* 3, 16-20.
- 2004a: 'Die Stadttore von Kuşaklı-Sarissa'. *Alter Orient aktuell* 5, 23-27.
- 2004b: 'Die Ausgrabung des Nordwest-Tores'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 2003'. *MDOG* 136, 146-57.
- 2006a: 'Inandiktepe und Sarissa. Ein Beitrag zur Datierung althethitischer Fundkomplexe'. In Mielke *et al.* 2006, 251-76.
- 2006b: 'Abschluss der Grabungen am Nordwest-Tor'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 2004 und 2005'. *MDOG* 138, 26-33.
- 2009: 'Alte Paradigmen und neue Erkenntnisse zur hethitischen Holz-Lehmziegelarchitektur'. In Bachmann, M. (ed.), *Bautechnik im antiken und vorantiken Kleinasien* (BYZAS 9) (Istanbul), 81-106.

- Mielke, D.P., Schoop, U.-D. and Seeher, J. (eds.) 2006: *Strukturierung und Datierung in der hethitischen Archäologie. Voraussetzungen – Probleme – Neue Ansätze/ Structuring and Dating in Hittite Archaeology. Requirements – Problems – New Approaches* (BYZAS 4) (Istanbul).
- Miglus, P.A. 2004: s.v. 'Palast. B. Archäologisch'. *RLAss* X, 233-73.
- 2005: s.v. 'Poterne'. *RLAss* X, 605-08.
- Mora, C. 1977: 'Saggio per uno studio sulla popolazione urbana nell'Anatolica Antica. I. Hattuscha'. *SMEA* 18, 227-41.
- Müller-Karpe, A. 1994: *Altanatolisches Metallhandwerk* (Offa-Bücher 75) (Neumünster).
- 1997: 'Untersuchungen in Kuşaklı 1996'. *MDOG* 129, 103-42.
- 1998: 'Untersuchungen in Kuşaklı 1997'. *MDOG* 130, 93-174.
- 1999: 'Untersuchungen in Kuşaklı 1998'. *MDOG* 131, 57-113.
- 1999-2000: 'Die Akropolis der hethitischen Stadt Kuşaklı-Sarissa'. *NBA* 16, 91-110.
- 2000: 'Ein Großbau in der hethitischen Stadtruine Kuşaklı. Tempel des Wettergottes von Sarissa?'. *Alter Orient aktuell* 1, 19-22.
- 2001: 'Untersuchungen in Kuşaklı 2000'. *MDOG* 133, 225-50.
- 2002: 'Kuşaklı-Sarissa. Kultort im Oberen Land'. In *Die Hethiter und ihr Reich* 2002, 176-89.
- 2004: 'Untersuchungen in Kuşaklı 2003'. *MDOG* 136, 137-72.
- Müller-Karpe, H. 1980: *Handbuch der Vorgeschichte*, vol. 4, pt 3 (Munich).
- Naumann, R. 1971: *Architektur Kleinasiens von ihren Anfängen bis zum Ende der hethitischen Zeit*, 2nd ed. (Tübingen).
- 1983: 'Sarkale in Boğazköy'. In Boehmer, R.M. and Hauptmann, H. (eds.), *Beiträge zur Altertumskunde Kleinasiens. Festschrift für Kurt Bittel* (Mainz), 383-90.
- Neu, E. 1974: *Der Anitta-Text* (StBoT 18) (Wiesbaden).
- Neve, P. 1966: 'Die Grabungen auf Büyükkale im Jahre 1966'. *MDOG* 97, 10-46.
- 1969: 'Der große Tempel und die Magazine'. In Bittel, K., Güterbock, H.G., Hauptmann, H., Kühne, H., Neve, P. and Schirmer, W., *Boğazköy IV. Funde aus den Grabungen 1967 und 1968* (Berlin), 9-19.
- 1976: 'Eine hethitische Hieroglyphen-Inschrift am Löwentor von Boğazköy'. *IstMitt* 26, 9-11.
- 1982: *Büyükkale. Die Bauwerke. Grabungen 1954-1966* (Boğazköy-Hattuša XII) (Berlin).
- 1987: 'Zur sogenannten hethitischen Brücke in Hattuscha-Boğazköy'. *Anatolia* 21 (1978-1980) (= Festschrift Akurgal), 67-70.
- 1993: 'Ein hethitisches Hausmodell aus Boğazköy-Hattuša'. In Mellink *et al.* 1993, 439-44.
- 1996a: *Hattuša – Stadt der Götter und Tempel. Neue Ausgrabungen in der Hauptstadt der Hethiter* (Mainz).
- 1996b: 'Housing in Hattuša, the capital of the Hittite kingdom'. In Sey, Y. (ed.), *Tarihten günümüze Anadolu'da konut ve yerleşme/Housing and Settlement in Anatolia. A Historical Perspective* (Istanbul), 99-115.
- 1999: *Die Oberstadt von Hattuša. Die Bauwerke. I. Das zentrale Tempelviertel* (Boğazköy-Hattuša XVI) (Berlin).
- 2001: *Die Oberstadt von Hattuša. Die Bauwerke. II. Die Bastion des Sphinxtores und die Tempelviertel am Königs- und Löwentor* (Boğazköy-Hattuša XVII) (Berlin).

- Ökse, A.T. 2000: 'Neue hethitische Siedlungen zwischen Maşat Höyük und Kuşaklı'. *IstMitt* 50, 87-111.
- Omura, S. 1998: 'Preliminary Report on the Twelfth Excavation Season at Kaman-Kalehöyük (1997)'. *AAS* 7 (= *Kaman-Kalehöyük* 7), 1-84.
- 1999: 'Preliminary Report on the Thirteenth Excavation Season at Kaman-Kalehöyük (1998)'. *AAS* 8 (= *Kaman-Kalehöyük* 8), 1-78.
- 2001: 'Preliminary Report on the 15th Excavation Season at Kaman-Kalehöyük (2000)'. *AAS* 10 (= *Kaman-Kalehöyük* 10), 1-35.
- 2002: 'Preliminary Report on the 16th Excavation Season at Kaman-Kalehöyük (2001)'. *AAS* 11 (= *Kaman-Kalehöyük* 11), 1-43.
- Otten, H. 1963: 'Aufgaben eines Bürgermeisters in Ḫattuša'. *BaghdMitt* 3, 91-96.
- 1983a: "'Brücken" im hethitischen Schrifttum'. In Boehmer, R.M. and Hauptmann, H. (eds.), *Beiträge zur Altertumskunde Kleinasiens. Festschrift für Kurt Bittel* (Mainz), 433-34.
- 1983b: 'Zur frühen Stadtgeschichte von Ḫattuša nach den schriftlichen Quellen'. *IstMitt* 33, 40-52.
- Özgüç, T. 1978: *Maşat Höyük kazıları ve çevresindeki araştırmalar. Excavations at Maşat Höyük and Investigations in its Vicinity (TTKY V.38)* (Ankara).
- 1982: *Maşat Höyük II. Boğazköy'ün kuzeydoğusunda bir Hitit merkezi. Maşat Höyük II. A Hittite Center Northeast of Boğazköy (TTKY V.38a)* (Ankara).
- 1988: *İnandıktepe. Eski Hitit çağında önemli bir kült merkezi. An Important Cult Center in the Old Hittite Period (TTKY V.43)* (Ankara).
- 1993: 'Studies in Hittite relief vases, seals, figurines and rock-carvings'. In Mellink *et al.* 1993, 472-99.
- 2003: *Kultepe-Kaniş/Neşa. The Earliest International Trade Center and the Oldest Capital City of the Hittites (The Middle Eastern Culture Center in Japan)* (Istanbul).
- Parzinger, H. and Sanz, R. 1992: *Die Oberstadt von Hattuša. Hethitische Keramik aus dem zentralen Tempelviertel. Funde aus den Grabungen 1982-1987 (Boğazköy-Ḫattuša XV)* (Berlin).
- Popko, M. 1994: *Zippalanda. Ein Kultzentrum im hethitischen Kleinasien (THeth 21)* (Heidelberg).
- 2003: 'Zur Topographie von Ḫattuša: Tempel auf Büyükkale'. In Beckmann, G., Beal, R. and McMahon, G. (eds.), *Hittite Studies in Honor of Harry A. Hoffner Jr.* (Winona Lake, IN), 315-23.
- Puhvel, J. 1991: *Hittite Etymological Dictionary*, vol. 3 (Berlin/New York).
- Schachner, A. 1999: 'Grabungen am Südost-Tor'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 1998'. *MDOG* 131, 69-79.
- Schirmer, W. 1969: *Die Bebauung am unteren Büyükkale-Nordwesthang in Boğazköy. Ergebnisse der Untersuchungen der Grabungscampagnen 1960-1963 (Boğazköy-Ḫattuša VI)* (Berlin).
- 1985: 'Hethitische Architektur'. In Orthmann, W. (ed.), *Der Alte Orient* (Propyläen Kunstgeschichte 18) (Berlin), 399-419.
- 2002: 'Stadt, Palast, Tempel. Charakteristika hethitischer Architektur im 2. und 1. Jahrtausend v. Chr'. In *Die Hethiter und ihr Reich* 2002, 204-17.
- Seeherr, J. 1999: 'Die Ausgrabungen in Boğazköy-Ḫattuša 1998 und ein neuer topographischer Plan des Stadtgeländes'. *AA*, 317-44.

- 2000: 'Getreidelagerung in unterirdischen Grossspeichern: Zur Methode und ihrer Anwendung im 2. Jahrtausend v. Chr. am Beispiel der Befunde in Ḫattuša'. *SMEA* 42.2, 261-301.
- 2002: 'Großkönigliche Residenz – Mittelpunkt staatlichen Lebens. Die Palastanlage in der hethitischen Hauptstadt'. In *Die Hethiter und ihr Reich* 2002, 94-99.
- 2003: 'Die Ausgrabungen in Boğazköy-Ḫattuša 2002'. *AA*, 1-24.
- 2004: 'Die Ausgrabungen in Boğazköy-Ḫattuša 2003'. *AA*, 59-76.
- 2005: 'Die Ausgrabungen in Boğazköy-Ḫattuša 2004'. *AA*, 63-80.
- 2006a: 'Chronology in Ḫattuša: New Approaches to an old Problem'. In Mielke *et al.* 2006, 197-213.
- 2006b: 'Die Ausgrabungen in Boğazköy-Ḫattuša 2005'. *AA*, 178-82.
- 2006c: 'Der althethitische Getreidesilokomplex'. In *Ergebnisse der Grabungen an den Ostteichen und am mittleren Büyükkale-Nordwesthang in den Jahren 1996-2000* (Boğazköy-Berichte 8) (Mainz), 45-84.
- Siegelová, J. 2001: 'Der Regionalpalast in der Verwaltung des hethitischen Staates'. *AoF* 28.2, 193-208.
- Siegelová, J. and Souček, V. 1996: *Systematische Bibliographie der Hethitologie 1915-1995* (Prague).
- Singer I. 1984: 'The AGRIG in the Hittite Texts'. *AS* 34, 97-127.
- Stümpel, H. 1995: 'Geophysikalische Prospektion'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 1992-94'. *MDOG* 127, 30-35.
- 1996: 'Geophysikalische Prospektion, 1995'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 1995'. *MDOG* 128, 85-93.
- 1997: 'Geophysikalische Prospektion, 1996'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 1996'. *MDOG* 129, 134-40.
- 1998: 'Geophysikalische Prospektion, 1997'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 1997'. *MDOG* 130, 144-53.
- Stümpel, H. and Erkul, E. 2001: 'Geophysikalische Prospektion, 2000'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 2000'. *MDOG* 133, 243-49.
- 2006: 'Geophysikalische Prospektion, 2001-2004'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 2004 und 2005'. *MDOG* 138, 37-41.
- Stümpel, H. and Lorra, S. 1999: 'Geophysikalische Prospektion, 1998'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 1998'. *MDOG* 131, 97-109.
- Süel, A. 1998: 'Ortaköy-Şapinuwa: Bir Hitit Merkezi'. *TÜBA-AR* 1, 37-61.
- 2002: 'Ortaköy-Şapinuwa'. In Yener and Hoffner 2002, 157-65.
- Süel, M. 2001: 'Ortaköy-Şapinuwa 'B' Binası'. In Wilhelm, G. (ed.), *Akten des IV. Internationalen Kongresses für Hethitologie, Würzburg, 4.-8. Oktober 1999* (StBoT 45) (Wiesbaden), 679-84.
- Thalmann, J.-P. 1990: 'L'urbanisme hittite'. In Huot, J.-L., Thalmann, J.-P. and Valbelle, D., *Naissance des cités* (Paris), 153-66.
- Tischler, J. 2001: *Hethitisches Handwörterbuch. Mit dem Wortschatz der Nachbarsprachen* (Innsbrucker Beiträge zur Sprachwissenschaft 102) (Innsbruck).
- Ünal, A. 2003: *Hittitler Devrinde Anadolu*, vol. 2 (Istanbul).
- van den Hout, T.P.J. 2002: 'Tombs and Memorials: The (Divine) Stone-House and Ḫegur Reconsidered'. In Yener and Hoffner 2002, 73-91.
- 2004a: s.v. 'Palast. A. VII. Bei den Hethitern'. *RLAss* X, 227-29.
- 2004b: s.v. 'Pferd (und weitere Equiden). A. II. In Anatolien'. *RLAss* X, 482-90.

- von der Osten, H.H. 1937: *The Alishar Hüyük. Seasons of 1930-32, II* (Oriental Institute Publications 29/Researches in Anatolia 7) (Chicago).
- von Schuler, E. 1957: *Hethitische Dienstanweisungen für höhere Hof- und Staatsbeamte* (AfO Beiheft 10) (Graz).
- Voss, J. 1988: 'Studien zur Rolle von Statuen und Reliefs im syrohetitischen Totenkult während der frühen Eisenzeit (etwa 10. – 7. Jh. v. u. Z.)'. *Ethnographisch-Archäologische Zeitschrift* 29, 347-62.
- Wilhelm, G. 1997: *Keilschrifttexte aus Gebäude A* (Kuşaklı-Sarissa 1.1) (Rhaden, Westphalia).
- Yener, K.A. and Hoffner, H.A. jr (eds.) 2002: *Recent Developments in Hittite Archaeology and History. Papers in Memory of Hans G. Güterbock* (Winona Lake, IN).
- Yon, M. 1997: *La cité d'Ougarit sur le tell de Ras Shamra* (Guides Archéologiques de l'Institut Français d'Archéologie du Proche-Orient 2) (Paris).

CHAPTER 8

HITTITE TEMPLES: PALACES OF THE GODS*

Caroline ZIMMER-VORHAUS

Abstract

Hittite temples, which have also been termed ‘palaces of the gods’, have been the focus of research since the beginning of excavations one hundred years ago. Meanwhile, a rather complex picture of these buildings has emerged. This overview will first deal with the architectural remains of the buildings which have been securely identified as temples. A discussion of the question to which deities the temples were dedicated, as well as the actual use of the temples and their economic role will follow. Lastly, the development and dating of Hittite temples will be discussed, as recent research has changed the traditional ideas considerably.

INTRODUCTION

For decades all research concerning Hittite temple architecture was restricted to the Hittite capital of Ḫattuša itself. It was the only place where Hittite temple structures were excavated and studied in a once vast realm which had bordered the Black Sea and the Mediterranean as well as the Egyptian zone of influence in the Levant. Only in the course of a century of field research and examination of written documents did the complexity of the temples – that went beyond the mere physical structure – become increasingly evident. And even now the Hittite temple has not given up all its secrets. It was more than a place of worship, but can instead be thought of as a ‘palace of the gods’.¹

The polytheistic nature of the religion of the Hittites has been the subject of intense research. The so-called ‘thousand gods of the Ḫatti-Land’ – both

* Special thanks go to Prof. Dr H. Hauptmann for supplying some suggestions and to Dr A. Reingruber for her support. This chapter is dedicated to the memory of my parents.

¹ Naumann 1971, 451: ‘Palace of a God’. The terms ‘temples’, ‘shrines’ and ‘sacred buildings’ are used as equivalent synonyms in this text.

state deities as well as local ones – more realistically numbered only several hundred. It has to be pointed out, however, that several deities may well have shared the same temple structure and perhaps even the same room. Besides shrines and chapels, open-air sanctuaries played an important role in Hittite religion and cult: stelae (*ḫuwaši* stones), rock sanctuaries or natural settings such as mountains, groves, springs and grottos were also considered as ‘holy places’.² Processions led to various destinations within the capital and beyond: these included other temples, holy places or buildings such as the *ḫesti* house (*ḫesti/a*)³ and *tarnawi* house (the precise meanings of these terms are still unclear). Processions may have taken place along a ‘sacred street’ or a processional avenue;⁴ processions were an important part of the elaborate Hittite rituals.⁵

THE EXPLORATION OF HITTITE TEMPLES

In 1906 the monumental architecture at Boğazköy-Ḫattuša was first systematically explored by a German expedition.⁶ Four out of five monumental buildings excavated (Temples 1-4) were identified as temples from the very beginning; an exception was Temple 5, which was first believed to be a royal palace.⁷ Before and particularly after the Second World War the German archaeologist K. Bittel and the architect R. Naumann intensified studies of Hittite sacred architecture in both Boğazköy and Yazılıkaya.⁸ Since the late 1970s P. Neve has concentrated his research in the Upper City of Boğazköy-Ḫattuša which had previously been much neglected. With the exploration of the Central Temple District in the Upper City the characteristic features of Hittite temples became clearer.

Presently a total of 36 Hittite sacred buildings are known. The majority of these (31 temples) are found in the capital itself (Fig. 1). Additionally, three shrines were excavated in the rock sanctuary of Yazılıkaya⁹ (Fig. 2) near the

² Klinger 2002, 97. For open-air sanctuaries, see the contribution by Ökse in this volume.

³ Perhaps to be identified as edifice B on Büyükkale (Haas and Wäfler 1976, 65-99; 1977).

⁴ Neve 1996, 17-18 and fig. 44; 1999, 10. See however the objections by H. Otten, quoted in Seher 2006, 207-08 and n. 3.

⁵ ‘In the morning a decorated chariot stands ready in front of the temple. (...) They harness the chariot and bring out the god from the temple and seat him in the chariot’ (Gurney 1990, 129-30).

⁶ H. Winkler, T. Makridi and notably O. Puchstein.

⁷ Puchstein *et al.* 1912.

⁸ Bittel *et al.* 1975, 91-124; Naumann 1971.

⁹ Bittel *et al.* 1975, 120-24, fig. 2; Ökse in this volume with his figs. 6 -7, pp. 229-32.

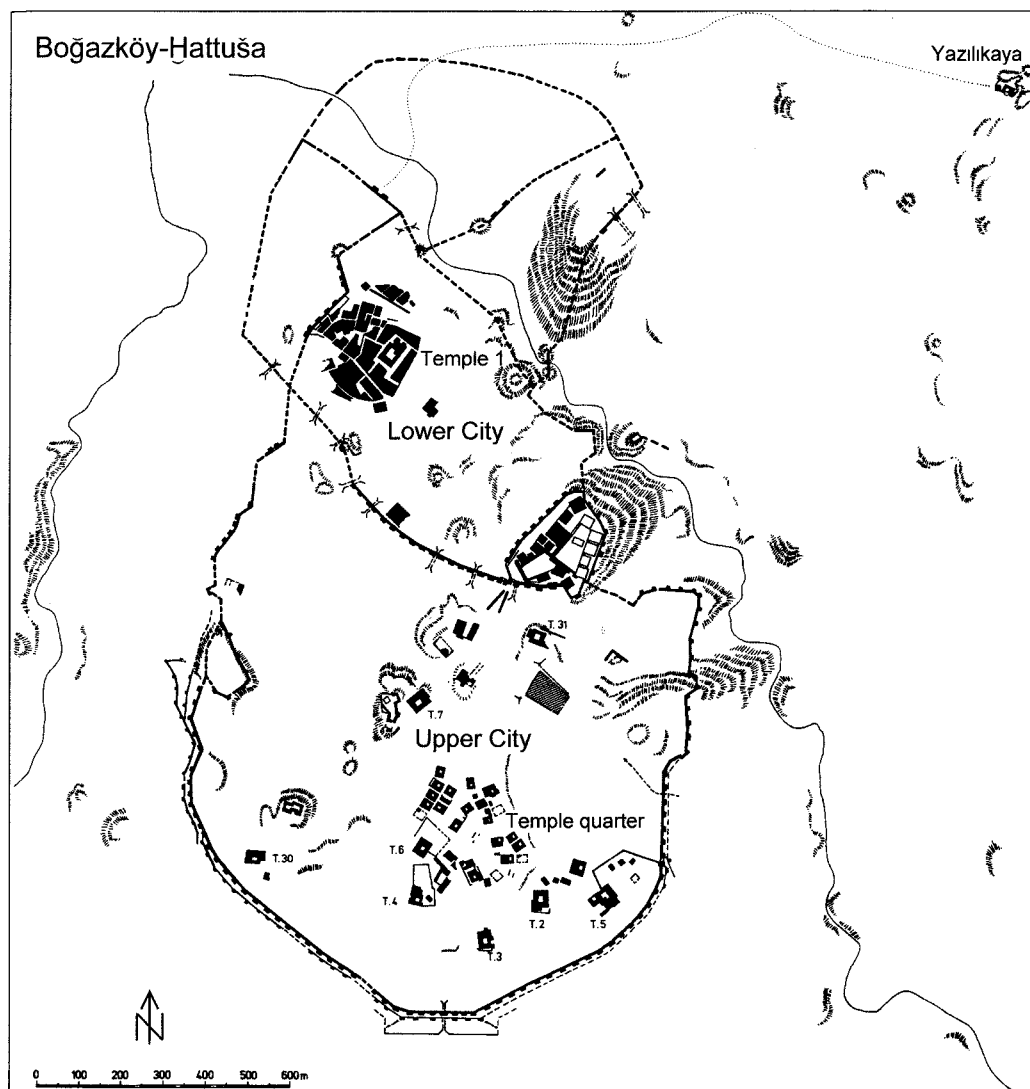


Fig. 1. Map of Boğazköy-Hattuša with location of the temples (after Neve 1996, fig. 27).

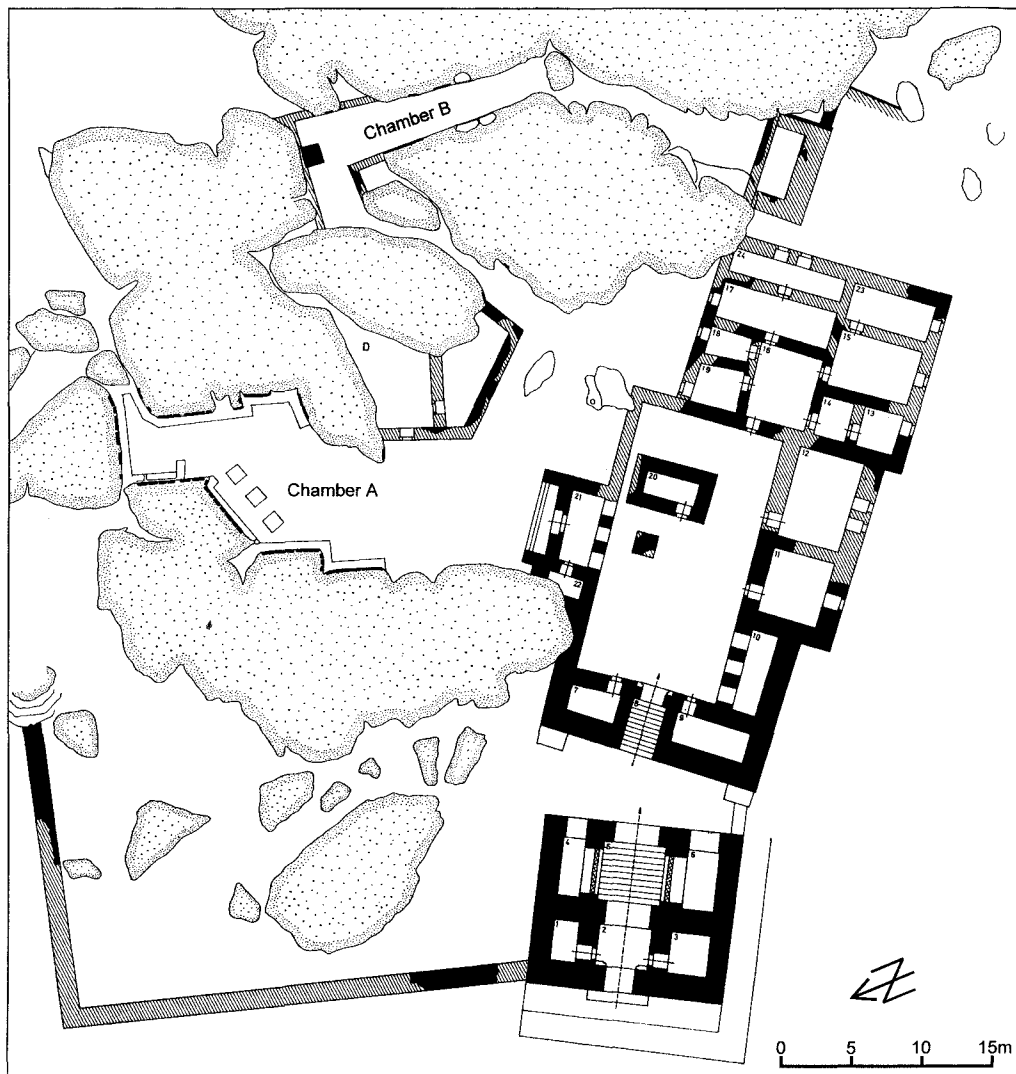


Fig. 2. Plan of the temple structure and the rock sanctuary of Yazılıkaya (after Bittel *et al.* 1975, fig. 82).

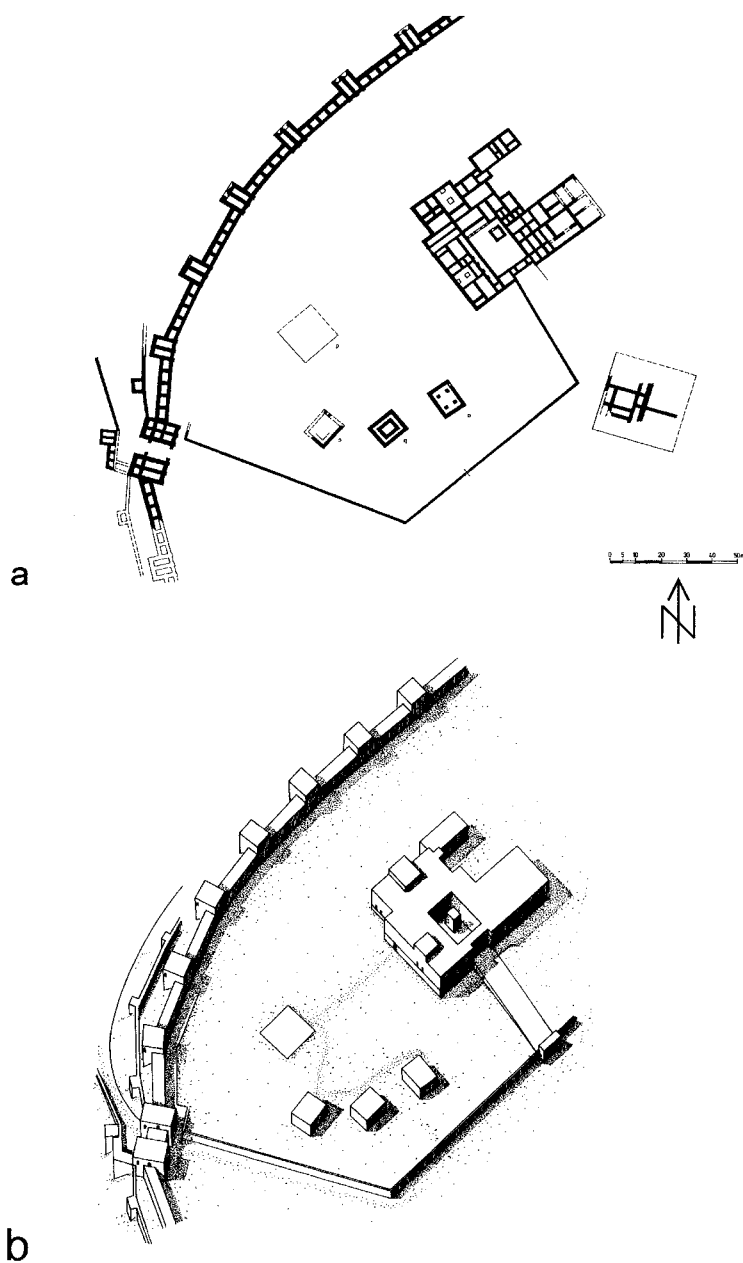


Fig. 3. Plan (a) and isometric reconstruction (b) of Temple 5 with three small 'chapels' (after Neve 1996, figs. 96 and 98).

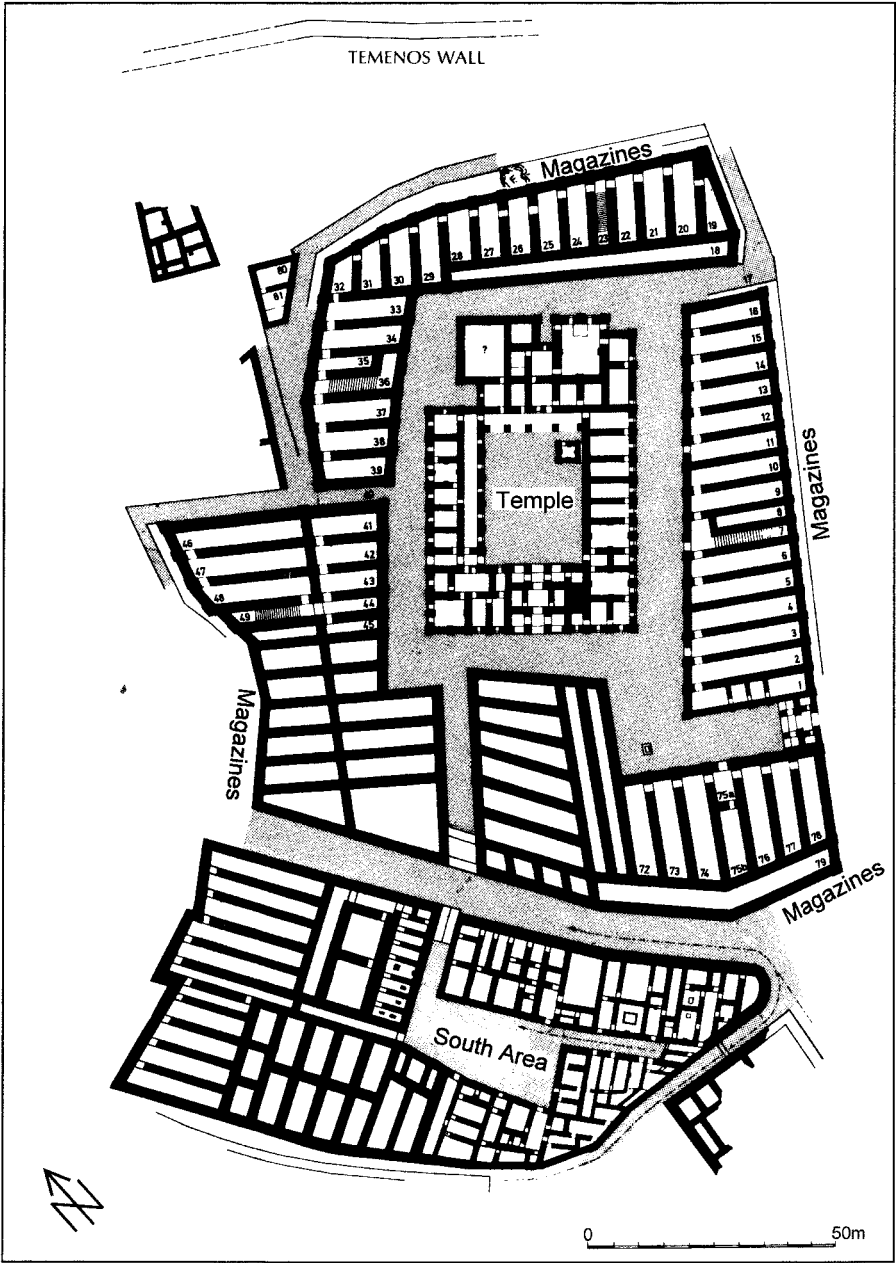


Fig. 4. Plan of the Great Temple (Temple 1) with magazines and Complex 1/South area in the Lower City of Boğazköy-Hattuša (after Bittel 1970, 56, fig. 13).

capital, and two particularly important temples have been excavated in the eastern part of Central Anatolia in Kuşaklı-Sarissa. The 31 temples within the capital Hattuša are distributed irregularly within the city (Fig. 1). Only one temple, namely the largest sacred building in Hattuša, the so-called Great Temple or Temple 1 (Fig. 4), was constructed in the Lower City. Some of the other large temples are spread across an area of sloping terrain of the Upper City (Fig. 1). The majority of the temples are concentrated in the 'Central Temple District' (Temples 4, 6, 8-29; Fig. 5). With this discovery Hittite temple architecture altogether appeared in a new light. These temples were not all constructed at the same time, and equally not all of the buildings were still in use at the collapse of the Hittite empire around 1200/1190 BC. During the late Empire period within the Upper City of Boğazköy-Hattuša (Figs. 1 and 5) a total of 17 destroyed temple structures were left to decay; these former shrines were built over with profane pottery production units, kilns and workshop areas.¹⁰

Due to the extensive area which has not been investigated yet, it can be assumed with a high degree of certainty that more sacred buildings originally existed in the capital.¹¹ The large number of buildings within the Temple District were possibly erected by way of a 'blueprint'. Seeher describes the architect's plan as follows:

Such a concentration of sacred buildings in this part of town [Upper City] probably does not exist without reason, since it symbolises the world order at the same time: the residences of the gods lie separately above the royal palace and it [the palace] once again lies above the Lower City with the residential area of the 'normal' citizens.¹²

Apart from the capital only a few temples from other Hittite sites are known: in Kuşaklı-Sarissa, located some 200 km south-east, of Boğazköy two large temples have been discovered since archaeological research began at this site in 1993 (Figs. 6-7a).¹³ Both are comparable with the monumental sacred buildings in Hattuša. Temple 1 in Kuşaklı is located on the North Terrace. Building C (Figs. 6-7a), the largest Hittite temple excavated so far in Hittite Anatolia, is located in the southern area of the acropolis. Comparisons of the ground plans and the progress made in scientifically dating these two structures both complement and change the picture gleaned from Hattuša.

In excavation reports from several other sites 'temples' are mentioned, but their actual identification as temples remains doubtful. The reasons for these

¹⁰ Neve 1999, 121-45.

¹¹ Seeher 2002, 135.

¹² Seeher 2002, 135.

¹³ A. Müller-Karpe 2002.

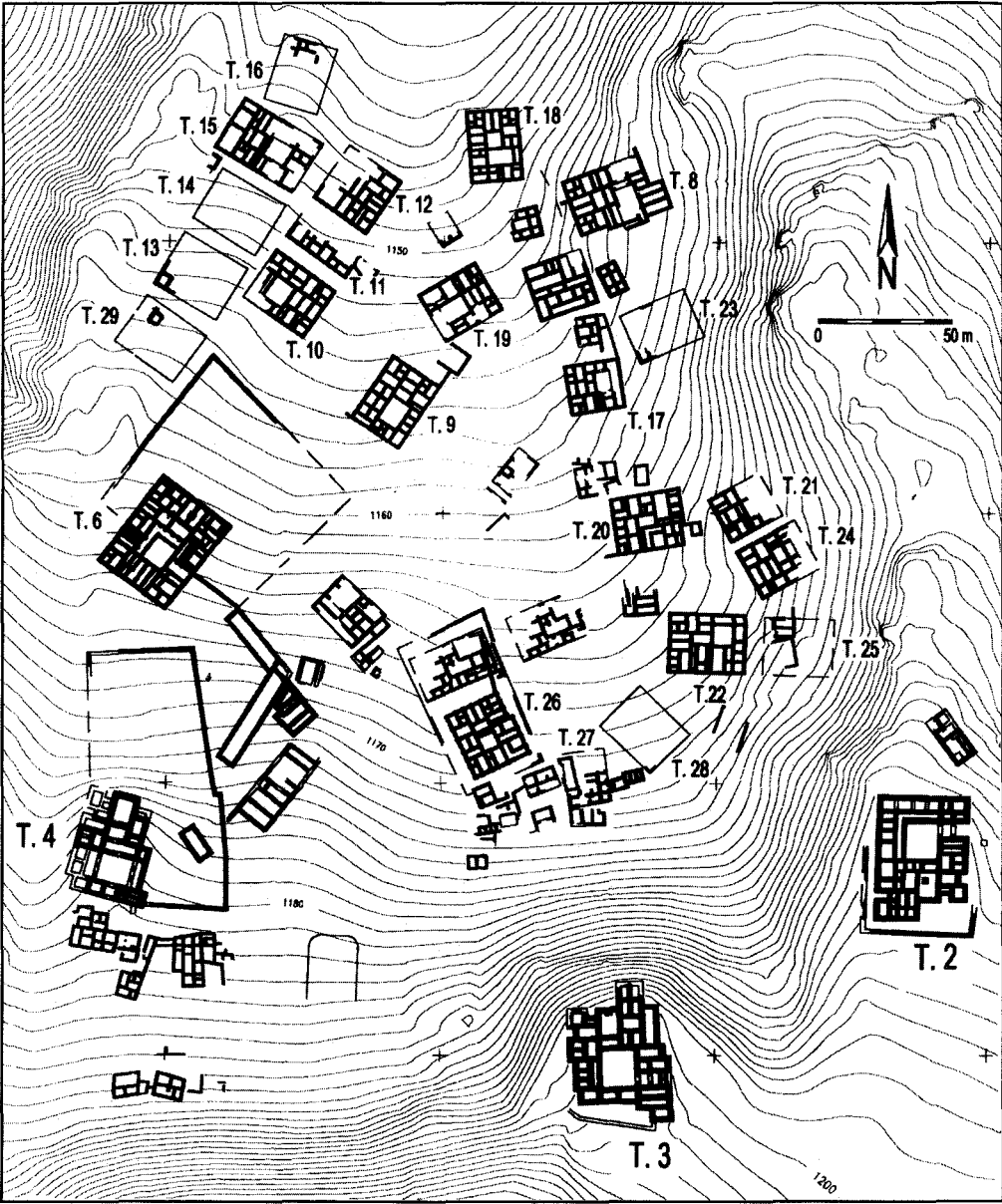


Fig. 5. Building plan of the Central Temple District in the Upper City of Hattusa (after Seeher 2002, fig. 11).

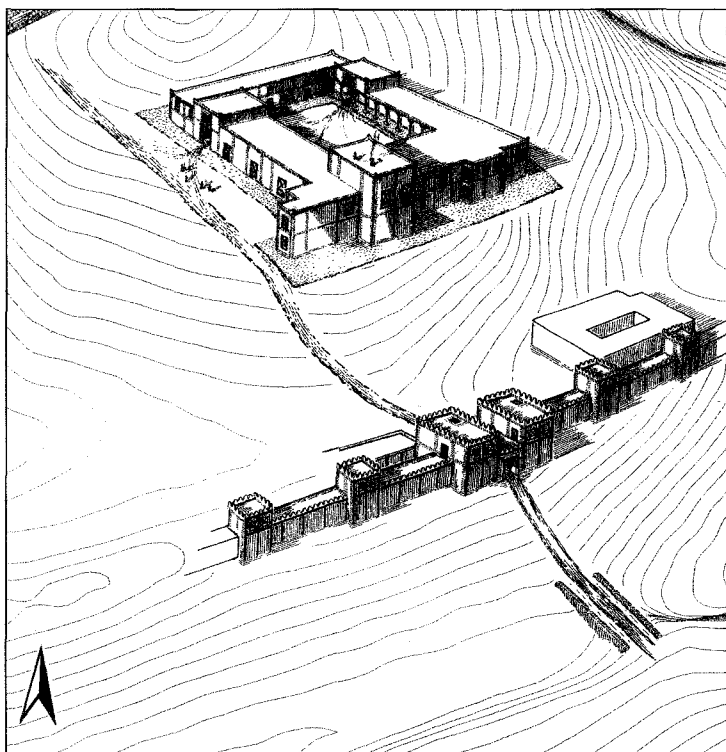


Fig. 6. Kuşaklı-Sarissa. Reconstruction of the south-east area of the city wall with the gate; behind the acropolis mound with Building C (Temple of the Weather God?). View from the south (drawing: M. Ober) (after A. Müller-Karpe 2000, fig. 5).

doubts vary greatly in nature. For an alleged temple in the Lower City of Maşat-Tapikka, some 116 km north-east of Boğazköy-Ḫattuša, no plans have yet been published.¹⁴ A building in Tarsus may resemble the temples from Boğazköy, but as it is only partly excavated, no clear conclusions regarding its function can be drawn.¹⁵ A site that needs reconsidering is İnandıktepe. It lies 80 km north-east of Ankara and holds a fairly prominent position in the Old Hittite period. This is due to a cuneiform tablet which appeared to link the so-called ‘Temple of Level IV’ along with its other inventory to a historical date. Özgüç wrote: [...] ‘the İnandıktepe temple, being of the period of Ḫattušili I,

¹⁴ Özgüç 1982, 80-83.

¹⁵ Goldman 1956, 49-50 and plan 22. Naumann (1971, 404-05 with fig. 538) interprets the building as a palace.

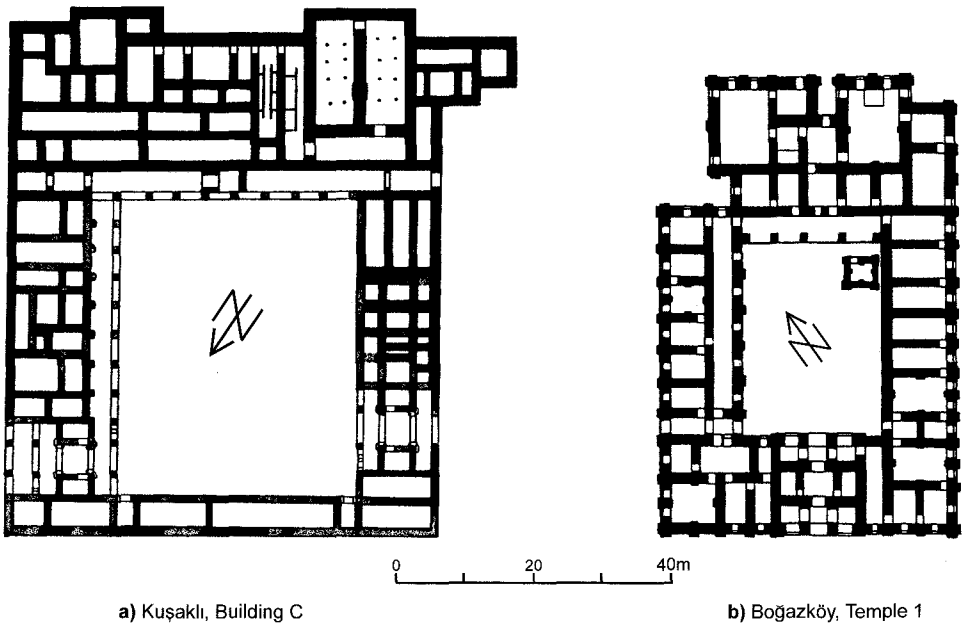


Fig. 7. Plan of Building C in Kuşaklı (a) and Plan of the Great Temple of Ḫattuša (b).
Drawn to scale (after A. Müller-Karpe 2003, fig. 5).

is the oldest example of an extant Hittite temple'.¹⁶ The edifice was identified by Özgüç as a temple on the grounds of its inventory and architecture (although parts of it are severely destroyed).¹⁷ A new assessment has shown that this building complex should rather be connected to palaces.¹⁸ On account of its size and layout the building should be identified as a country estate, dating to the last quarter of the 16th century BC.¹⁹ Also the so-called 'Temple Palace' in Alaca Höyük should rather be connected with palaces.²⁰

The architecture of the majority of these buildings mentioned above does not reflect the increasingly well understood ground plans of the securely identified

¹⁶ Özgüç 1988, 107. For a plan of this building, see Özgüç 1988 map 5 and plan I (see also Mielke in this volume, fig. 5.5). A reconstruction of the topographical situation is provided in Mielke 2006b, fig. 1.

¹⁷ Özgüç 1988, 70, 76, 123-25.

¹⁸ Mielke 2006b, 255. See also the contribution by Mielke in this volume, p. 167.

¹⁹ Mielke 2006b, 271.

²⁰ Naumann 1971, 401-04 (see the contribution by Mielke and his fig. 5.4 in this volume, p. 165).

temples. Nevertheless, more temples are expected to be found in both the capital and in other regional centres of the Hittite empire, which probably again will necessitate a revision of our view of Hittite temples.

THE ARCHITECTURE

The size of Hittite temples varies between approximately 400 and 4660 m². The ground plans of the largest temples (Figs. 4-7) are to a great extent of a uniform type, although they vary in details.²¹ All temples have a rectangular ground plan, often structured by niches in earlier temples. These niches seem to disappear later on. Also remarkable is a decline in size from the earlier to the later temples.

The main elements of a Hittite temple are present in almost all sacred buildings,²² even in the smaller temples: gateway (KÁ.GAL), courtyard (*hila*), pillared hall (possibly: *híllamar*) and the inner sanctuary, often labelled with the Greek word *Adyton* by modern archaeologists.²³ The Hittite word for temple is *ékarimmi*.²⁴ Details such as the orientation and dimensions of a building,²⁵ the number of inner sanctuaries,²⁶ and anterooms belonging to them, the number of room clusters in sequence (courtyard – anteroom – inner sanctuary), the presence of small ‘courtyard houses’,²⁷ storerooms and annexe-buildings, chapels,²⁸ and in the interior (state rooms, living quarters/apartments, archives, stairwells, pilasters, building sculpture, altars, pedestals and the inventory) may

²¹ Bittel 1970, 55.

²² The only exception is Yazılıkaya, where the inner sanctuary is replaced by Chambers A and B, which both very likely also served cultic purposes (Bittel *et al.* 1975, 123) The pillared entrance hallway before Chamber A is present as are courtyard and gateway (Bittel *et al.* 1975, 122-23, figs. 82-83)

²³ Bittel 1976, 134.

²⁴ When a specific temple is named, it is referred to as É.DINGIR NN, ‘Temple/House’ of God NN, i.e. É²UTU (Temple of the Sun Goddess).

²⁵ Range of Hittite temple dimensions: in Boğazköy Temple 17: 17 × 20 m (one of smallest structures, except for ‘chapels’); in Kuşaklı Building C: 76 × 61, 5-74 m (presently the largest known structure).

²⁶ At least one inner sanctuary is present in each temple; in at least two cases ‘double temples’ exist: the Great Temple and Temple 5 of Boğazköy-Ḫattuša. The Great Temple was probably dedicated to the Weather God of Ḫatti and the Sun Goddess of Arinna.

²⁷ Small one-roomed structures (‘Einraumhaus’) stand in the courtyards of the Great Temple, Temple 5 in Boğazköy and Yazılıkaya (Structure II). They have been interpreted as either elevated altar towers (Neve 1967) or as washing rooms (Puchstein *et al.* 1912, 97, fig. 70).

²⁸ Three small chapel-like structures A, B and C (dimensions 10 × 12 m) were erected in the temenos of Temple 5 in Boğazköy. They were perhaps dedicated to the deified kings Tuthaliya (A), Muršili II (B) and Ḫattušili III (Neve 1996, 35-36, figs. 96, 98, 100-105; Neve 2001, 32).

vary to a great extent, however. Several temples lie within a walled-in holy area (*temenos*).²⁹

'Profane' use of the temples as living and kitchen quarters can sometimes be detected, and both functions have been substantiated by written documents. Bathrooms are likewise present,³⁰ which have to be interpreted in connection with purification rituals mentioned in cultic texts. In one specific case a brewery can be identified.³¹ It is well known that beer played an important role in cultic practices, particularly in the process of libations. Certain room clusters are interpreted as economic units or as storage rooms. The specific function of many rooms remains elusive, as especially in Ḫattuša only few temples contained remains of their original inventory. New data are available from recent excavations in Kuşaklı, where Building C and Temple 1 contained a wide array of pottery and small finds.³²

The impressive façades, especially of the earlier buildings, were formed by projections and niches, which is clearly evident in all the large temple structures in both Boğazköy-Ḫattuša (Figs. 4, 7b) and Kuşaklı-Sarissa (Figs. 6-7a). Bittel envisaged the temples of Boğazköy 'with plastered façades in light and vivid colours (...), a grand sight consciously aimed for from below'.³³ Some Hittite temples were adorned with sculptures, as fragments of lions and sphinxes from Temples 2 and 3 Ḫattuša show.³⁴ The interior walls of some temples in the Hittite capital were decorated with frescoes, of which unfortunately only a few polychrome fragments remain.³⁵

The walls were constructed of mud bricks on stone foundations. An inner timber frame helped stabilising the mudbrick walls.³⁶ The shrines possibly possessed an upper storey, but this is still debated.³⁷ The roofs of temples were used in rituals, as S. Alp has convincingly pointed out.³⁸ Therefore the roofs must have been flat and either completely or at least partially accessible. Single elements, such as the gateways or the inner sanctuaries may have jutted out

²⁹ The Great Temple 1 and Temples 4-6 in Boğazköy-Ḫattuša.

³⁰ Boğazköy: Temple 5 in room 38 (Naumann 1971, 202, 457); Kuşaklı: Temple 1 in rooms 27/28 (A. Müller-Karpe 1995, fig. 17).

³¹ Kuşaklı Building C: room 58 (A. Müller-Karpe 2000, 97).

³² A. Müller-Karpe 2000.

³³ Bittel 1976, 127.

³⁴ Neve 1996, 39-40 with figs. 112-119.

³⁵ Neve 1996, 26 and fig. 75.

³⁶ Neve 1999, 153. In contrast Naumann 1971, 98.

³⁷ The storerooms which surround the Great Temple in Boğazköy-Ḫattuša have been reconstructed in part (North-East Storehouse) with up to three or four levels (Neve 1969, 13). The shrine itself may not have had a second storey.

³⁸ Alp 1993, 87, 113, 139, 229.

above the roof level (Fig. 6).³⁹ Nearly all the temples were fitted with a lower basement level. The basement dimensions rarely coincided with those of the ground floor – they tended to be smaller.⁴⁰ Basements were frequently used as storage areas or economic units.

The temples possessed at least one gateway⁴¹ with a varying number of gate chambers and guard rooms. In one of the two gateways of Building C in Kuşaklı-Sarissa (Fig. 7a) a construction element becomes visible in Hittite context for the first time: it constitutes of a projecting pillared hallway which opens to the outside. On both sides of the gate axis two pillars support the roof.⁴² In the Assyrian period this feature is referred to as a *bit hilani*.

Side entrances are also present, which vary in number and location.⁴³ From the gateway an open courtyard paved with flagstones could be entered which varied in size. A pillared hallway runs along one side of the courtyard. Another smaller pillared entrance hall had to be crossed before entering a vestibule,⁴⁴ which is part of the room cluster bordering the inner sanctuary. The inner sanctuary itself could only be reached by crossing one or more vestibules. Access was certainly restricted to certain professions and small groups of persons specified in texts as priests, members of the royal family, etc.

The sanctuaries consist of rectangular rooms of variable sizes. Usually the inner width was such that it could be bridged without a support for the roof beams.⁴⁵ Double temples with two sanctuaries within the same structure are rarely documented: the Great Temple in Ḫattuša may have been the Temple of the Weather God of Ḫatti and the Sun Goddess of Arinna,⁴⁶ Temple 5 likewise

³⁹ See reconstruction drawings: Great Temple (Neve 1969, 19, fig. 4) and Temple 5 (Neve 1996, 39, fig. 98) in Boğazköy-Ḫattuša; Building C in Kuşaklı-Sarissa (A. Müller-Karpe 2000, 95, fig. 5).

⁴⁰ The Great Temple did not possess a lower level. Instead it was surrounded by multi-storeyed storerooms.

⁴¹ Most Hittite temples have only one major gateway and, if at all, a side entrance. In Building C at Kuşaklı two major gateways and further side entrances exist. The major gates lie across from each other: one in the north-west and the other in the north-east (A. Müller-Karpe 2000, 96).

⁴² A. Müller-Karpe 2000, 98. A possible precursor, dating to the later Karum I b period, may be identified in Temple II of Kültepe-Kaneš (A. Müller-Karpe 2000, 109-10 n. 10). However, the excavator of Kültepe-Kaneš, T. Özgüç, rejects any connection with the *bit hilani* construction (Özgüç 1999, 119).

⁴³ In the Great Temple in Boğazköy at least one (possibly two) side entrances can be located; in Building C at Kuşaklı a total of four side entrances are present.

⁴⁴ In the larger, more monumental temples there were frequently three vestibules, while in the smaller temples often only one vestibule is attested.

⁴⁵ With the exception of Building C at Kuşaklı, where the inner width across the sanctuary (rooms 4-5) reached 13 m.

⁴⁶ Bittel 1970, 57. Bittel suggested the south-eastern area was the Temple of the Sun Goddess of Arinna. It has been frequently interpreted as the É GIŠ.KIN.TI ('Haus der Arbeitsleistung'/'House of Labour').

appears to have had two sanctuaries. The room cluster adjoining the sanctuary and the sanctuary itself projects from the façade in a way that it could be illuminated by side windows.⁴⁷ This construction detail is in contrast to the sanctuaries of Egyptian and Babylonian temples, in which 'only sparse light fell in through a doorway; the interior was kept in a secretive semi-darkness'.⁴⁸ The windows of Hittite temples were closed very likely by shutters from the outside in order to preserve their holiness.

It is possible to reconstruct the interior of a sanctuary to a certain extent with the help of texts listing objects used in rituals. A text states that libations were performed in certain areas of the sanctuary, possibly before the statue of a god,⁴⁹ the hearth, the throne, the windows and elsewhere. Hearths may have been located in Sanctuaries 8 and 24 of Temple 5 in Hattuša (Fig. 3). The locations of the wooden thrones cannot be identified, as platforms or similar indications for their position are absent. This might suggest that they were portable.⁵⁰ In the centre of the outer wall in an appropriate distance to the door⁵¹ the cult statue representing a deity stood on a stone pedestal.⁵² The presence of these cultic pedestals⁵³ was important in identifying these buildings as temples. The statues, statuettes or 'symbols of the gods'⁵⁴ were made of precious metal,⁵⁵ wood or both. The statues' eyes were often filled with inlays and their extremities decorated with metal fittings.

An 'inner chamber' (known in Sumerian as É.ŠÀ) is located to the left hand side of the sanctuary and is connected to a tiny vestibule which can only be accessed via the sanctuary itself. The 'inner chamber' contained the 'holy bed'.⁵⁶ It has therefore also been interpreted as the 'bed chamber' of the Hittite

⁴⁷ Naumann 1971, 456.

⁴⁸ Bittel 1976, 127-28.

⁴⁹ This view is expressed by H. Otten and cited in Naumann 1971, 456. Otten believes that a libation was performed before or near the statue of a deity.

⁵⁰ Naumann 1971, 456.

⁵¹ Doors were located near the corner and always as far away as possible from the cult statue. The person entering the holy room made a 90° turn in order to stand before the statue of the deity.

⁵² Gurney 1990, 123. Quite possibly more than one deity was worshipped in the same sanctuary. Several deities are occasionally named in the same context: The question remains unresolved, whether or not deities were worshipped collectively in the same room (or 'chapels')?

⁵³ Only a few examples have been preserved altogether and their use is not beyond doubt: in Hattuša in the Great Temple (not in the sanctuary, therefore different purpose?); Temple 2 (Altar or pedestal?); Temple 7 (Pedestal?); Temple 15 (Pedestal? not found *in situ*).

⁵⁴ A golden bull, chariot or weapons for instance represent the Weather God of Hatti, whereas the sun disc symbolises the Sun Goddess of Arinna.

⁵⁵ Gold, silver, bronze and iron are materials frequently mentioned in Hittite texts (see the contribution by Siegelová in this volume, pp. 275-83).

⁵⁶ Popko 2003, 13; described by Puchstein as 'bed of a deity' (Puchstein *et al.* 1912, 148).

royal couple.⁵⁷ The É.ŠÀ has been described as ‘an inner chamber removed from profane glances in which the statues of the deities were cleansed, anointed and dressed’.⁵⁸ This was evidently a daily routine much the same as providing the gods with food and drink (bread and cheese were ‘broken’).⁵⁹ The room cluster to the right of the sanctuary may have functioned as a storage room for cult objects, a sort of ‘vestry’.⁶⁰

FOR WHICH GOD?

The Mesopotamian tradition of inscribed foundation deposits and building inscriptions unfortunately was not practised in the Hittite lands.⁶¹ Therefore no clear connection exists between a specific Hittite deity and a specific Hittite temple. Lists of cult inventory and of sacrificial offerings imply that several deities were worshipped in the same temple and perhaps even in the same room.⁶² The highest ranking deities more than likely each possessed their own temples.⁶³ In rare cases an assumption can be put forward. The late phase of Temple 1 in Ḫattuša – frequently referred to as É^{TIM} GAL⁶⁴ – was probably dedicated to the highest state gods, the ‘Weather God of Ḫatti’ and the ‘Sun Goddess of Arinna’.⁶⁵ The identification was based on the *Šahurunnuwa* document (CTH 225). It was found in the eastern storeroom of Temple 1 and stated that it had been ‘placed before the Weather God’.⁶⁶ M. Popko, however, challenges this interpretation. He seeks to connect specific gods with specific edifices in the vicinity of the royal palace on Büyükkale. He proposes to locate the temple of the highest state god, the Weather God of Ḫatti (Logogram IM(-na-) – perhaps Tarḫuna? – the Hattian Taru?) close to the royal residence, which is referred to as *Ḫalentiu-* (in Old Hittite) or *Ḫalentuwa-* (a younger form); Popko argues that the Weather God was the patron deity of the royal

⁵⁷ Alp 1993, 17-19, 86-88, 123; the room was too small to serve as a ‘bed room’ (A. Müller-Karpe 2000, 97).

⁵⁸ Naumann 1971, 457. Located in shrines: Boğazköy: Great Temple: room 42 (granite block); Temples 2-4: room 13 b; Temple 5: for sanctuary (24): room 20; sanctuary (8): room 11; Temples 6-7: probably rooms 16-17; in Kuşaklı: room 1.

⁵⁹ Gurney 1990, 124-25.

⁶⁰ Naumann 1971, 457.

⁶¹ Bittel 1970, 60.

⁶² Bittel 1976, 127; 1969, 9; Klengel 1975, 183.

⁶³ Seeher 2002, 135.

⁶⁴ Popko 2002, 73 n. 3.

⁶⁵ Bittel 1976, 127.

⁶⁶ Popko 2002, 80.

family and therefore must have had a temple in the Old Hittite period.⁶⁷ The temple of the Sun Goddess of Arinna may likewise have to be searched for near or in the royal residence.⁶⁸ According to Popko this and the greater number of the other temples on Büyükkale would have been rather small – and should be regarded as ‘chapels’.⁶⁹ According to the Hittite text KBo 11.22 Rs. IV 5’-7’ the king was able to enter the temple directly – without crossing a courtyard.⁷⁰

Building C in Kuşaklı-Sarissa (Figs. 6-7a) was probably also dedicated to the chief weather god, but in the appearance of the ‘Weather God of Sarissa’.⁷¹ Also provincial cults were located in the capital. According to written documents at least 18 regular religious festivals (AN.TAḪ.ŠUM, *purulliy*) were observed in Ḫattuša alone.⁷² They were organised by both the Hittite king as well as by other dignitaries.⁷³

It is probable that different forms of temple buildings/structures existed parallel to each other at any given time. This would include the distinct temple scheme of both the larger and smaller temples known from Ḫattuša and Kuşaklı. But it would also include the proposed ‘chapels’ on Büyükkale as well as the so-called ‘chapels’ within the *temenos* wall of Temple 5 or open-air sanctuaries.

CULT AND TEMPLE PERSONNEL

Entry into the sanctuary itself was more than likely restricted to a select few which included members of the clergy as well as the king and queen. The special role of the royal couple is clearly stated in many ritual texts. The Hittite Great King was endowed with insignia of power by the gods; he fulfilled important duties within various cults. Rituals were frequently long and rather complicated. The Great King was meant to communicate directly with the gods. The Great King also cared for the temples.⁷⁴ He also united the political,

⁶⁷ Popko 2002, 73.

⁶⁸ Popko 2003, 11.

⁶⁹ Popko 2003, 13.

⁷⁰ *na-aš I-NA É ʰUT [U] (6') pa[-iz-z]i LUGAL-uš K[Á] É ʰUTU a-ri (12') LUGAL-uš QA-TI-ŠÚ a-an-ši (13') na- aš DI[NGIR^{LM}-n]i (14') UŠ-KI-EN*: ‘He (the king) goes into the Temple of the Sun Goddess ... (hand washing ceremony). The king wipes his hands and bows in front of the deity’ (Popko 2003) [original in German].

⁷¹ A. Müller-Karpe 2000, 94.

⁷² Gurney 1990; de Martino 2002.

⁷³ Klengel 1975, 189.

⁷⁴ Klinger 2002, 110.

military, religious, cultic and the legal power in one hand. The sovereign arranged for the maintenance and renovation of sacred buildings; he also levied taxes from the Hittite population for various shrines and he transferred spoils of war to temples. The king likewise disposed over temple estate, inventory, goods and personnel.

Most scholars subsume nearly all professional titles and designations under the term ‘temple personnel’. Not all professional titles and job functions mentioned in documents are clearly understood – much less the details and nuances.⁷⁵ Temple personnel include officials (administrators, functionaries), various scribes, domestics (for example water carriers, sweepers, cooks, etc.), potters, basket makers, carpenters, farmers, and shepherds. Two other groups mentioned in texts are slaves and prisoners who evidently were affiliated with temples. Parts of the personnel probably resided in the living quarters of the temples. Likewise there must have been a sort of common room for the personnel on duty. In this context the É GIŠ.KIN.TI, the ‘house of labour’, needs to be mentioned. This institution is difficult to grasp, but it may have served as both a workplace and living quarters.⁷⁶ It may have been located in Complex 1/South area in the vicinity of Temple 1 in Boğazköy (Fig. 4).⁷⁷ ‘Temple instructions’ demanded that ministrants had to be ritually clean before serving the gods and perform necessary rites of purification; food and drink for the gods were not to be diverted by personnel for private use; corruption (probably frequent) was not tolerated; all staff returned to the temples at night; patrol and fire watching were regular duties.⁷⁸

The cult personnel consisted primarily of the clergy (priests: LÚSANGA, LÚGALA, LÚGUDU₁₂, etc.; priestesses: ^{nunus}šiwanzanna-) and cult functionaries (LÚtazelli-, LÚḫamina-, LÚḫapiya-, etc.). Both men and women of different ranks served in this capacity.⁷⁹ At least three different categories of priests are known: priests of official state cults, priests of local cults and so-called ‘experts in special religious procedures’.⁸⁰ No detailed study of the Hittite clergy exists up to now.⁸¹ The finer points in the relationship between priests and functionaries are mostly unclear.⁸² Both a hierarchical structure of the Hittite clergy and the

⁷⁵ Klinger 2002, 100, 103. Klinger prefers a division of the terms cult and temple personnel.

⁷⁶ Bittel 1969, 11; Klinger 2002, 102-03.

⁷⁷ Bittel 1969, 11.

⁷⁸ Gurney 1990, 125.

⁷⁹ Imparati 1999, 354-55.

⁸⁰ Imparati 1999, 354.

⁸¹ Taggar-Cohen 2007 was published after the completion of this manuscript and could not be incorporated in the text [Editors].

⁸² Klinger 2002, 110.

Great King's function as a 'high priest' are widely accepted scholarly opinions.⁸³ Klinger opposes this pervasive view: 'the concept of a rigid organisation of the clergy along with a strict hierarchy must be differentiated according to tradition and context in favour of a side by side of a whole variety of forms.'⁸⁴ He adds that the notion of the Great King as a 'high priest' is 'nothing more than a sort of label', which has yet to be properly filled with content.⁸⁵

The selected group of the personnel could be extended to include specific cult personnel which were likewise present during religious ceremonies. Rituals not only took place in the sanctuary but in different locations such as the courtyard, the gateway, on the roof, or near a window. This circle of participants outside of the innermost sanctuary could involve a wide range of both cult and temple personnel:⁸⁶ various clergy, seers, augurs, singers, musicians, scribes and sometimes the royal bodyguards (^{LÚ}MEŠEDI) and courtiers.⁸⁷

THE ECONOMY OF THE TEMPLES

Temples as institutions were not only shrines but also autonomous economic entities,⁸⁸ because the clergy and personnel who did not live on taxes and tribute payments had to be supported. The income of the temples was supplied partially by earnings; the other part was received in donations and tax duties.⁸⁹ Deities and their temples were recipients of income much in the same way as the vassals of the king, as the temple estates were derived from state property.⁹⁰ The temples resembled to a certain degree medieval monasteries.⁹¹ Quite little is known about the Hittite temple as an economic entity. The temples independently produced a range of both finished and semi-finished products; the latter were passed along for further steps in production. It is a rather curious fact that relevant documents concerning economic processes are widely absent: one explanation may be the use of perishable materials such as ink on wooden tablets.

Products were primarily produced for the temples own needs and consumption:⁹² breeding and rearing of (sacrificial) animals (for example oxen,

⁸³ Imparati 1999, 354.

⁸⁴ Klinger 2002, 110.

⁸⁵ Klinger 2002, 110.

⁸⁶ For a division of cult and temple personnel, see Klinger 2002, 97.

⁸⁷ Güterbock 1975; Gurney 1990, 120-30.

⁸⁸ Seeher 2002, 135; Klengel 1975, 185.

⁸⁹ Klengel 1975, 186.

⁹⁰ Klengel 1975, 186, 191.

⁹¹ Neve 1999, 155.

⁹² Klengel 1975, 191.

sheep, goats), pottery production, food production (bread, cheese, beer, other consumables) for rituals as well as the needs of the temple personnel, trade and craftsmanship. In many temples economic units and workshop areas stand out due to their specific inventory. Likewise storage areas have been identified.

DATING AND DEVELOPMENT OF THE BUILDINGS

Just as the identification of the deities worshipped in specific temples is problematic, so is the absolute dating of the buildings. Due to the lack of datable building inscriptions as late as the 1990s only an indirect dating of the temples in Boğazköy was possible.⁹³ One possible option for the dating of the buildings would have been the artefact assemblages, but interestingly enough these were largely neglected. In the case of the Upper City, where the majority of the temples are located, the dating of the temples was based on general assumptions on the development and expansion of the Hittite capital. Previous excavators of the site argued that the so-called ‘Upper City’ of Hattuša was erected more or less in a single construction phase as late as the middle of the 13th century BC. This construction period was attributed to two Hittite Great Kings: Hattušili III and above all Tuthaliya IV, who were both named as instigators of this building programme.⁹⁴ The dates are based on Bittel’s assumptions: ‘We see them as creations of the 13th century, probably after 1280 B.C. There is no certainty due to the lack of absolutely datable finds.’⁹⁵ So the buildings in this area were supposed to have been erected in a relatively short time span: a period of a little more than half a century (40-50 years). Neve followed Bittel’s dating approach for Temple 1 in the Lower City and the other four monumental shrines (Temples 2-5) in the Hittite capital.

The new excavations at Kuşaklı call for a revision of this picture, as it was here that a first precise dating of Hittite temples was possible due to dendrochronological results.⁹⁶ Especially Building C on the acropolis is of great importance, as its erection can – with a high degree of probability – be dated to the last quarter of the 16th century BC.⁹⁷ The ground plans of Building C in

⁹³ Klinger (2006, 8-9) has convincingly demonstrated that the assumption of the Upper City having been built by king Tuthaliya (‘Tuthaliya Hattuša City’) rests on very weak arguments.

⁹⁴ Seeher 2006, 198.

⁹⁵ Bittel 1970, 60.

⁹⁶ While the dendrochronological curve for Anatolia is still floating, recent calibrations of this curve with high-precision radiocarbon dates have led to a ‘nearly absolute’ precision (Manning *et al.* 2001; for a summary, see Mielke 2006a).

⁹⁷ Kuniholm and Newton 2002; for a summary, see Mielke 2006a, 89; 2006b, 266-68.

Kuşaklı and Temple 1 in Boğazköy (Fig. 7) are remarkably similar, just as Temple 1 in Kuşaklı and Temple 7 in Upper City of Boğazköy (Fig. 8). Also a comparison between the inventories of the temples at both sites has raised doubts about the traditional dating of Hittite temples.⁹⁸ Recent researches in the capital, which also incorporated dating techniques provided by the natural sciences, especially radiocarbon dating, have provided further evidence for a re-dating of the temples.⁹⁹ This ultimately necessitated a major revision of the principles of dating in Hittite archaeology, affecting not only the dating of the temples themselves,¹⁰⁰ but also their inventory, including pottery, cuneiform documents and objects of art.¹⁰¹ According to these results the development of sacred buildings in the Upper City of Hattuša can be reconstructed as follows:

1. The oldest buildings were erected with massive worked stone walls and with projections and niches in their façades. This group includes Temples 2, 3 and 4.
2. During the second phase temples were extended and their ground plans became more regular, wall thickness and quality of worked stone used in construction decreased continually, as can be shown in Temples 6 and 7.
3. In the latest phase a number of smaller temples with more rectangular ground plans were erected. Examples are Temples 18, 20, 22 and 26. Structured façades become rare (Temple 26 is an exception).

Thus it becomes clear that Hittite temples with all their specific characteristics were present from the Old Hittite period onwards, which opens up new questions concerning the origin of this architectural tradition. For many years the fact that Hittite sacred buildings appear as a fully developed form of architecture with no precursor was an unquestioned opinion.¹⁰² No development which led to this particular architectural form could be identified until recently.¹⁰³ These problems are presently under scrutiny. There is little evidence for the assumption that Hittite temples derived from shrines of the Anatolian Early and Middle Bronze Age or from earlier Anatolian house forms. More than likely the precursors can be found in the palaces of the Pre-Hittite period. Naumann referred to: 'the palatial character of the Hittite temple which can be explained by the fact that they were created after the same prerequisites as a palace, one can say as the palace of a God'.¹⁰⁴

⁹⁸ A. Müller Karpe 2003; V. Müller-Karpe 2006.

⁹⁹ Seeher 2006; Schoop and Seeher 2006.

¹⁰⁰ A. Müller-Karpe 2003; Neve 1999, 10-13.

¹⁰¹ For a summary, see the various contributions in Mielke *et al.* 2006.

¹⁰² Neve 1999, 159.

¹⁰³ Bittel 1976, 122.

¹⁰⁴ Naumann 1971, 451.

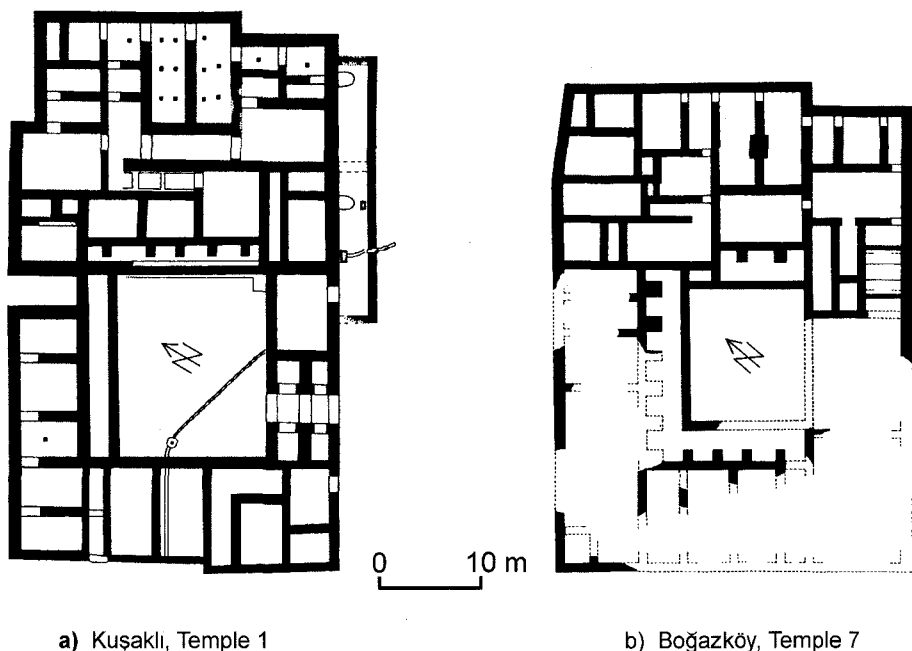


Fig. 8. Plan of Temple 1 in Kuşaklı (a) and Temple 7 in the Upper City of Hattuša (b).
Drawn to scale (after V. Müller-Karpe 2006, fig. 1).

A. Müller-Karpe traces back the architectural development to a much earlier Anatolian monumental building, the Waršama palace in Kültepe-Kaneš. This structure dates to the Late Karum period (phase I b) and has been dated by dendrochronological analysis to the year 1810 BC.¹⁰⁵ With a dimension of 110 × 100 m it far surpasses all known Hittite monumental buildings.¹⁰⁶ The ground plan shows a regular and rectangular structure with straight outside walls that are occasionally subdivided by projecting pilasters; without this remarkable model of a well planned and executed building the development of the Hittite sacred architecture would have been unthinkable.¹⁰⁷

The end of the Karum period and the transition to the Old Hittite period marks the beginning of a new age; culturally however it constitutes a continuity

¹⁰⁵ Kuniholm and Newton 2004; A. Müller-Karpe 2000, 104.

¹⁰⁶ Özgüç 1999, 79-94, plans 1-2.

¹⁰⁷ A. Müller-Karpe 2000, 105.

and further development of the preceding period.¹⁰⁸ It remains yet to be examined what traces Hittite sacred architecture left after the collapse of the Hittite empire at around 1200 BC during the Neo-Hittite period in the former Hittite heartland and beyond.

BIBLIOGRAPHY

- Alp, S. 1993: *Beiträge zur Erforschung des hethitischen Tempels: Kultanlagen im Lichte der Keilschrifttexte (TTKY VI.23a)* (Ankara).
- Bittel, K. 1969: 'Bericht über die Ausgrabungen in Boğazköy im Jahre 1968'. *MDOG* 101, 5-13.
- 1970: *Hattusha. The Capital of the Hittites* (New York).
- 1976: *Die Hethiter. Die Kunst Anatoliens vom Ende des 3. bis zum Anfang des 1. Jahrtausends vor Christus* (Munich).
- Bittel, K., Boessneck, J., Damm, B., Güterbock, H.G., Hauptmann, H., Naumann, R. and Schirmer, W. 1975: *Das hethitische Felsheiligtum Yazılıkaya (Boğazköy-Hattuša IX)* (Berlin).
- de Martino, S. 2002: 'Kult- und Festliturgie im hethitischen Reich'. In *Die Hethiter und ihr Reich. Das Volk der 1000 Götter* (Bonn), 118-21.
- Goldman, H. 1956: *Excavations at Gözlükule, Tarsus. II. From the Neolithic through the Bronze Age* (Princeton).
- Güterbock, H.G. 1975: 'The Temple According to Written Sources'. In van Donzel, E. (ed.), *Le Temple et le Culte* (XX Rencontre Assyriologique Internationale, Leiden 1972) (Istanbul), 125-32.
- Gurney, O.R. 1990: *The Hittites*, revised ed. (New York).
- Haas, V. and Wäfler, M. 1976: 'Bemerkungen zu *ḫeštilā*'. *UF* 8, 65-99.
- 1977: 'Bemerkungen zu *ḫeštilā* (2. Teil)'. *UF* 9, 87-122.
- Imparati, F. 1999: 'Die Organisation des hethitischen Staates'. In Klengel, H. *Geschichte des Hethitischen Reiches (HdO Abteilung 1.34)* (Leiden/Boston/Cologne), 320-87.
- Klengel, H. 1975: 'Zur ökonomischen Funktion der hethitischen Tempel'. *SMEA* 16, 181-200.
- Klinger, J. 2002: 'Zum "Priestertum" im hethitischen Anatolien'. In Lebrun, R. (ed.), *Panthéons locaux de l'Asie Mineure pré-chrétienne* (Premier Colloque Louis Delaporte – Eugène Cavaignac: Institut Catholique de Paris, 26-27 mai 2000) (Bibliothèque des Cahiers de L'Institut de Linguistique de Louvain 109) (= *Hethitica* 15) (Louvain/Paris), 93-111.
- 2006: 'Der Beitrag der Textfunde zur Archäologiegeschichte der hethitischen Hauptstadt'. In Mielke et al. 2006, 5-17.
- Kuniholm, P.I. and Newton, M. 2002: 'Dendrochronological Investigations at Kuşaklı/Sarissa'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 2001'. *MDOG* 134, 339-42.

¹⁰⁸ A. Müller-Karpe 2000, 105.

- 2004: 'A dendrochronological Framework for the Assyrian Colony Period in Asia Minor'. *TÜBA-AR* 7, 165-76.
- Manning, S.W., Kromer, B., Kuniholm, P.I. and Newton, M. 2001: 'Anatolian Tree Rings and a New Chronology for the Eastern Mediterranean Bronze-Iron Ages'. *Science* 294, 2532-35.
- Mielke, D.P. 2006a: 'Dendrochronologie und hethitische Archäologie – einige kritische Anmerkungen'. In Mielke *et al.* 2006, 77-94.
- 2006b: 'Inandiktepe und Sarissa. Ein Beitrag zur Datierung althethitischer Fundkomplexe'. In Mielke *et al.* 2006, 251-76.
- Mielke, D.P., Schoop, U.-D. and Seeher, J. (eds.) 2006: *Strukturierung und Datierung in der hethitischen Archäologie. Voraussetzungen – Probleme – Neue Ansätze/ Structuring and Dating in Hittite Archaeology. Requirements – Problems – New Approaches* (BYZAS 4) (Istanbul).
- Müller-Karpe, A. 1995: 'Untersuchungen in Kuşaklı 1992-94'. *MDOG* 127, 5-36.
- 2000: 'Die Akropolis der hethitischen Stadt Kuşaklı-Sarissa'. *NBA* 16, 91-110.
- 2002: 'Kuşaklı-Sarissa. Kultort im oberen Land'. In *Die Hethiter und ihr Reich. Das Volk der 1000 Götter* (Bonn), 178-89.
- 2003: 'Remarks on Central Anatolian chronology of the Middle Hittite period'. In Bietak, M. and Hunger, H. (eds.), *The Synchronisation of Civilisations in the Eastern Mediterranean in the Second Millennium B.C., II* (Proceedings of the SCIEEM 2000 EuroConference, Haindorf, 2nd May-7th May 2001) (Contributions to the Chronology of the Eastern Mediterranean 4) (Vienna), 383-94.
- Müller-Karpe, V. 2006: 'Tempelinventare in Kuşaklı und Boğazköy im Vergleich: Ein Beitrag zur hethitischen Chronologie'. In Mielke *et al.* 2006, 241-49.
- Naumann, R. 1971: *Architektur Kleinasien von ihren Anfängen bis zum Ende der hethitischen Zeit*, 2nd ed. (Tübingen).
- Neve, P. 1967: 'Hoftürme in den hethitischen Tempeln von Boğazköy-Ḫattuša'. *IstMitt* 17, 78-92.
- 1969: 'Der große Tempel und die Magazine'. In Bittel, K., Güterbock, H.G., Hauptmann, H., Kühne, H., Neve, P. and Schirmer, W., *Boğazköy IV. Funde aus den Grabungen 1967 und 1968* (Abhandlungen der Deutschen Orient-Gesellschaft 14) (Berlin), 9-19.
- 1996: *Ḫattuša Stadt der Götter und Tempel. Neue Ausgrabungen in der Hauptstadt der Hethiter*, 2nd ed. (Mainz).
- 1999: *Die Oberstadt von Hattusa. Die Bauwerke. I. Die Bebauung im Zentralen Tempelviertel* (Boğazköy-Ḫattuša XVI) (Berlin).
- 2001: *Die Oberstadt von Ḫattuša. Die Bauwerke. II. Die Bastion des Sphinxtores und die Tempelviertel am Königs- und Löwentor* (Boğazköy-Ḫattuša XVII) (Mainz).
- Özgüç, T. 1982: *Maşat Höyük II. Boğazköy'ün kuzeydoğusunda bir Hitit merkezi/ A Hittite Center Northeast of Boğazköy* (TTKY V.38a) (Ankara).
- 1988: *İnandiktepe. Eski Hitit çağında önemli bir kült merkezi/An Important Cult Center in the Old Hittite Period* (TTKY V.43) (Ankara).
- 1999: *Kültepe-Kaniş/Neşa Sarayları ve Mabketleri/The Palaces and Temples of Kültepe-Kaniş/Neşa* (TTKY V.46) (Ankara).
- Popko, M. 2002: 'Zum Tempel des Tessup von Halab in Ḫattuša'. *AoF* 29, 73-80.
- 2003: 'Zum Tempel der Sonnengöttin von Arinna in Ḫattuša'. *AoF* 30, 11-17.
- Puchstein, O., Kohl, H. and Krencker, D. 1912: *Boghazköi – Die Bauwerke* (WVDOG 19) (Osnabrück).

- Schoop, U.-D. and Seeher J. 2006: 'Absolute Chronologie in Boğazköy-Ḫattuša: Das Potential der Radiokarbonaten'. In Mielke *et al.* 2006, 53-75.
- Seeher J. 2002: 'Heiligtümer – Kultstätten und multifunktionale Wirtschaftsbetriebe'. In *Die Hethiter und ihr Reich. Das Volk der 1000 Götter* (Bonn), 134-39.
- 2006: 'Chronology in Ḫattuša: New Approaches to an Old Problem'. In Mielke *et al.* 2006, 197-213.
- Taggar-Cohen, A. 2007: *Hittite Priesthood (THeth 26)* (Heidelberg).

CHAPTER 9

OPEN-AIR SANCTUARIES OF THE HITTITES

A. TUBA ÖKSE

Abstract

The Hittites believed in influence of gods on the fertility of earth and celebrated several festivals to worship them. Weather gods were worshipped at mountains since rain came from mountains, and natural water sources were sacred. Significant springs in plains or on mountains were formed into spring sanctuaries by building ponds, carving reliefs or erecting temples. Rock formations near springs were places for worship, further developed to rock sanctuaries enriched with reliefs, temples or mausolea. On arterial roads connecting the Hittite land with its boundaries, rock façades by water sources were furnished with reliefs to make these places sacred mark-stones of a representative character.

INTRODUCTION

The main resources of natural life are water and earth. The level of all water sources rises in the spring due to the melting snow and new vegetation begins to spread, bringing new life. Dry farming of the Hittite highlands depended on the quality of earth and the quantity of rain. Clouds bringing rain come from high mountains, which are sources of springs and rivers. These natural events caused the Hittites to believe that mountains, rocks, natural springs, rivers and pools were sacred. Mountains and rocks were believed to be gods and water sources to be goddesses.¹

Periods of drought in the Anatolian highlands caused dearth and famine. When a spring dried out, people believed that the Spring Deity or the Weather God was angry and descended to the underworld. To prevent disasters, weather and vegetation gods and spring goddesses had to be satisfied with offerings and ritual ceremonies. Cuneiform texts record a number of rituals carried out every seventh or ninth spring,² related to period of drought occurring each

¹ Güterbock 1946, 489-92; Jakob-Rost 1963, 221-25.

² Haas 1994, 465-66.

seventh or ninth year. In the course of these ceremonies, people tried to cause rain to fall by carrying out incantation rituals similar to those for purification, with offerings made to springs and by floating a model boat filled with magic substances at a river bank.³ During the KILAM festival spring water was poured over naked people, animals or dolls, thus pleading to the weather gods for rain.⁴ In another version, people immersed dolls or themselves in a river, pool, basin or spring. In the period of Ḫattušili III, drought was believed to occur because the 'Weather God of Nerik'⁵ was angry and descended to the underworld, while in another version the god changed the bed of the River Maraššantiya (Kızılırmak). The ritual took place in a cave with a spring where various offerings were made to recall the god to his palace.

Hittite myths mention some mountains as sacred places housing gods and demons. Reliefs show gods and spirits of deceased kings standing on mountain tops or on mountain gods. An early Hittite text⁶ describes mountains as places where the gods assemble, and explains how the king goes up to the mountain to perform various offering rituals. Mountains were places of worship to the weather gods. During the AN.TAḪ.ŠUM festival⁷ in spring at the beginning of the agricultural year, the king and the queen ascended the mountain to make offerings to the gods and the king also performed the rain festival for the Storm God.

Hittites believed that rocks were the home of gods and equipped with magical powers attracting the gods. A Hittite myth describes the snake-dragon Ullikummi, the son of ^DKumarbi, as a diorite rock growing up.⁸ Rocks facing water sources were preferred for cultic activities, since these rocks symbolised mountains. Gods were believed to inhabit large rock groups or single rocks named *ḫuwaši* (^ZÄZI.KIN).⁹ These stones were 'mark-stones' in the form of natural rock formations or stelae and were also used as altars in the open air for the placement of offerings or figures of the gods during ceremonies carried out for the weather gods, mountain gods, springs and wells.¹⁰ A text from

³ Götze 1955, 346; Macqueen 1959, 175; Haas 1994, 465-67, 698-99.

⁴ Wegner 1978, 403-06.

⁵ Güterbock 1946, 487-89; Götze 1955, 393-94; Macqueen 1959, 171-73, 176-77. The Weather God of Nerik is equated with the Weather God of Zippalanda and ^DŠarumma, the son of ^DTeššub and ^DHepat.

⁶ Bittel 1981, 66; Götze 1955, 358.

⁷ Macqueen 1959, 175; Güterbock 1960, 85, 87, 90-92; Bittel 1981, 66; Hawkins 1998b, 70; Haas 1994, 82-83, 85, 99, 394, 773-826.

⁸ Götze 1955, 121-22.

⁹ Bossert 1952, 497, 501-02; Jakob-Rost 1963, 175, 179, 210-25; Güterbock 1946, 489, 491-93; Singer 1983, 101, 117.

¹⁰ Börker-Klähn 1982, 83.

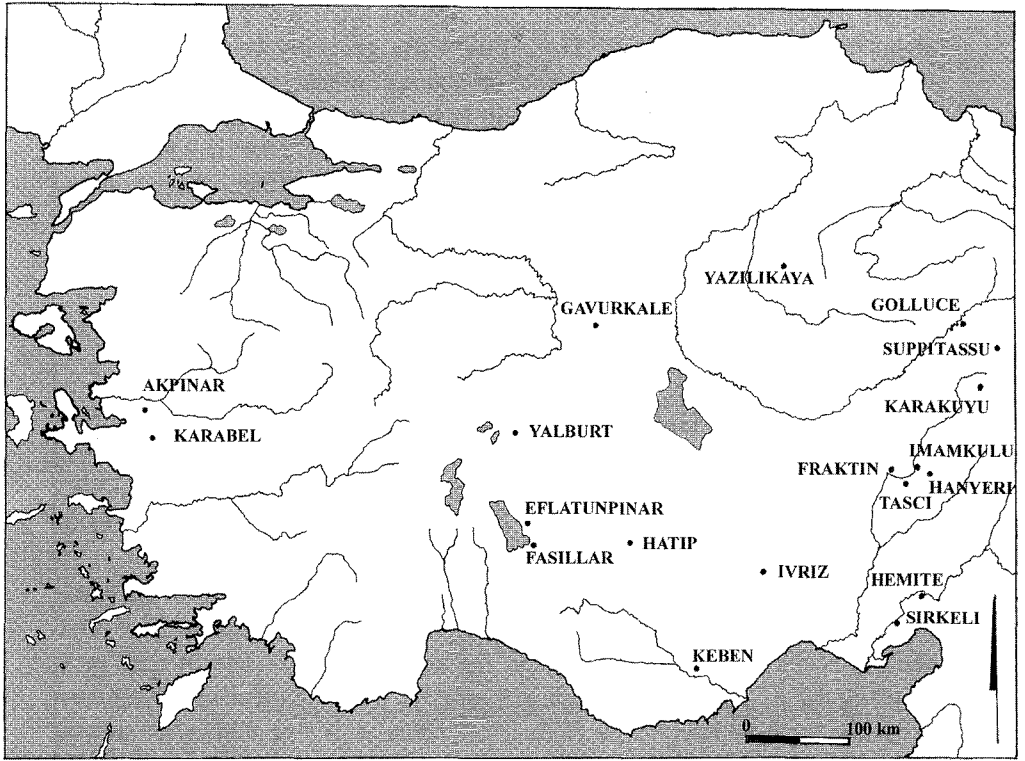


Fig. 1. Hittite open-air sanctuaries. Sites mentioned in the text (layout: A.T. Ökse).

Boğazköy describes the king's libation to the gods in front of a *huwaši* stone on a mountain.¹¹ Texts mention an $\text{É}^{\text{NA}}_4\text{.DINGIR}^{\text{LIM}}$, 'Stone House of the God' which it is suggested might be the royal tomb,¹² and an $\text{É}^{\text{NA}}_4\text{-}h\text{ekur-}$,¹³ translated variously as a mountain peak, possibly with a rocky outcrop, the stone house, the 'summit house' or the royal mausoleum.

Water sources, mountains and rocks had cultic significance and became open-air sanctuaries, sometimes enriched with reliefs and cult buildings. The location of Hittite open-air sanctuaries reflects the relation of mountains and rocks with water.¹⁴ Cuneiform texts mention many sanctuaries and describe

¹¹ Haas 1994, 244.

¹² Singer 1983, 117.

¹³ Güterbock 1956, 102, 163; Otten 1963, 18; Bittel 1981, 67; van den Hout 2002, 74, 78, 80, 87-88.

¹⁴ Barnett 1953, 80-81.

rituals. However, no topographical descriptions were given to enlighten us about their locations (Fig. 1). These places can generally be subdivided into four groups. Spring sanctuaries, either on plains or mountains, are situated near rich springs; sometimes a dam was built to make an artificial pool. Some rock formations near springs chosen for ritual ceremonies became rock sanctuaries as well. If rocks by springs or rivers were on significant roads connecting the Hittite lands with their boundaries, rock façades were chosen for the representation of gods and kings.

SPRING SANCTUARIES

The most famous spring sanctuary is Eflatun Pınar, about 6.5 km to east of the Lake of Beyşehir,¹⁵ situated on the road connecting Hūlaya and Tarhuntašša to the west.¹⁶ To the north-east of the monument, a rich water source emerges from the earth. Near the monument, there is a settlement mound with sherds dating to the 2nd millennium BC.

A square enclosure wall creates a basin fed by strong springs from the north, blocked by a dam further to the south (Fig. 2). The basin measures 34 × 30 m and was constructed of ashlar.¹⁷ On the north wall, a façade of 6.55 m in height and 7 m in length was built of worked monolithic blocks set symmetrically one upon another.¹⁸ The lowest row consists of five blocks set side by side, middle part of five blocks sandwiched between by two higher blocks on each side, and two horizontal blocks form the top.

On the southern face of this structure high reliefs were carved *en face* (Fig. 3). The lowest row was composed of five mountain gods.¹⁹ The middle three are pierced by 11 holes connected to a channel supplying water for the basin. The reliefs show a framed inner scene, subdivided into three parts.²⁰ In the middle are two demons, one standing on top of the other; on the left is an enthroned male figure, on the right a female figure. This scene is flanked by two pairs of blocks, again with two demons on top of each other, carrying two winged sun discs above the heads of the enthroned figures. The outer frame consists of two pairs of blocks with two larger demons, again standing on top of each other, carrying a large winged sun disc stretching above the whole

¹⁵ Bachmann and Özenir 2004.

¹⁶ Börker-Klähn 1982, 105-06, 250.

¹⁷ Özenir 2001, fig. 2.

¹⁸ Güterbock 1947, 61; Naumann 1971, 442; Börker-Klähn and Börker 1976; Erkanal 1980.

¹⁹ Özenir 2001, figs. 3-4.

²⁰ Bittel 1976, 224; Kohlmeyer 1983, 40.

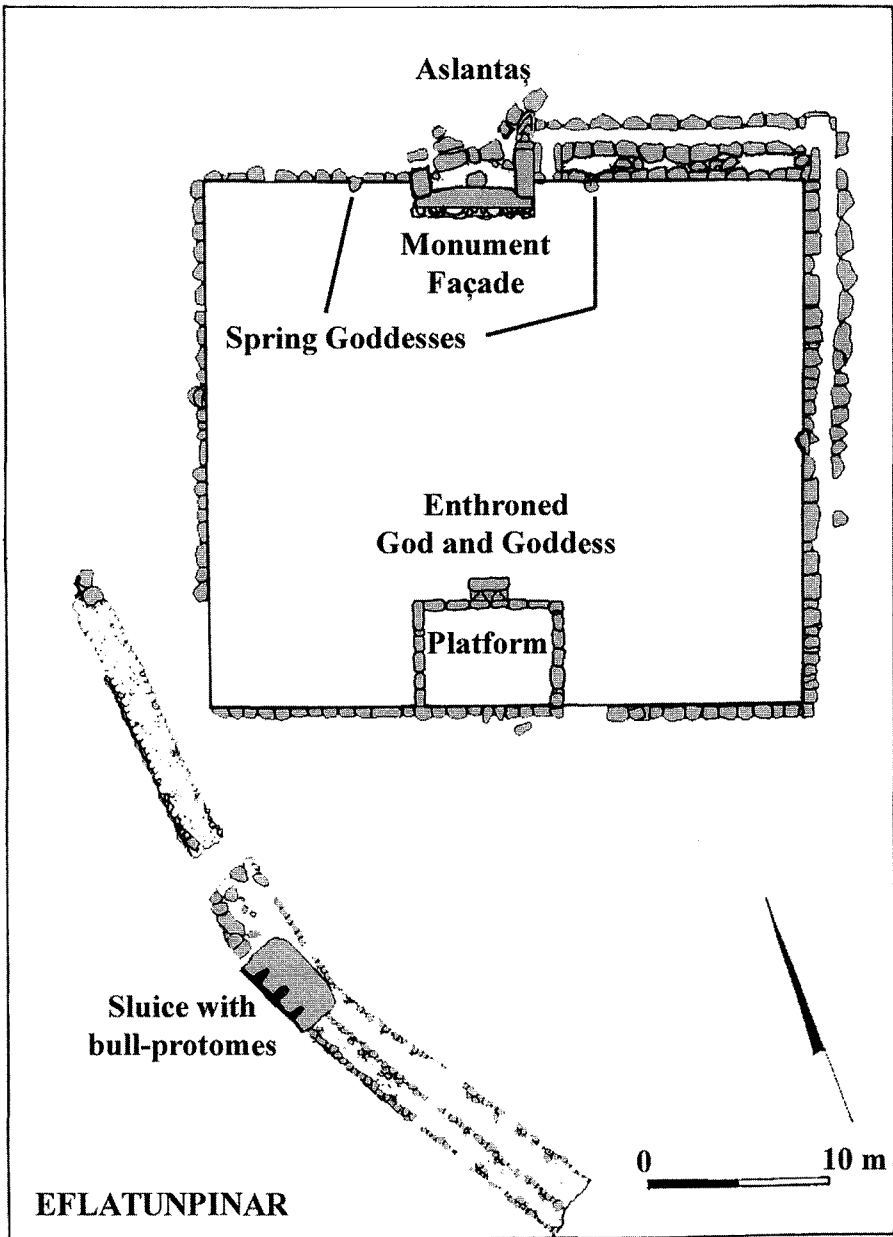


Fig. 2. Plan of the spring sanctuary at Eflatun Pınar (after Özenir 2001, fig. 2).

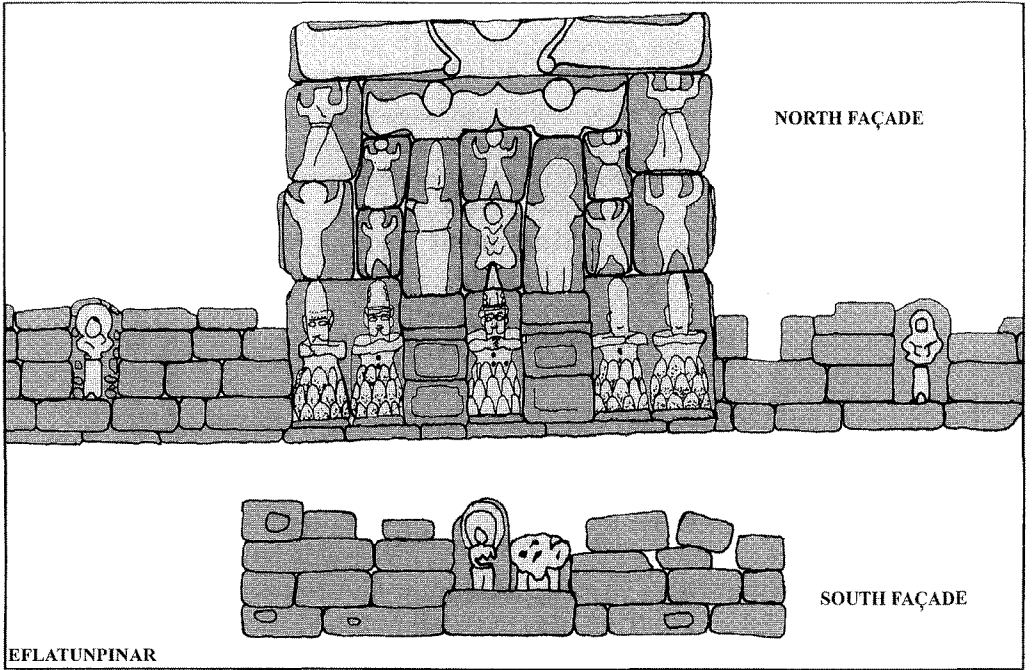


Fig. 3. Façade of Eflatun Pınar (after Özenir 2001, fig. 3).

scene. To the right and the left of the monument, there are two smaller enthroned goddesses integrated into the stone wall, each about 3 m distant from the main monument.

On the southern wall opposite the monument, a rectangular platform of 6×8.50 m was built of ashlar. On its northern face, an enthroned god and a goddess were carved *en face* in high relief from one monolithic block.²¹ In front of them is an altar of 2.40×0.70 m. A statue of a mountain god recovered in front of the platform does not seem to have been found in its original position. On the outer face of this platform and the south wall, stone discs protrude. In the middle of the eastern wall is a relief block with two figures.

A trachyte block 15 m to south-west of the basin, which was supposed to have been the sluice, appears to show three bull protomes. During excavation 12 bull statues used as spoil in a later period were recovered. The bull figures were found near to the western and southern walls, and two lion figures were found at the north-west corner of the basin. However, there is no indication of

²¹ Özenir 2001, 537-39, fig. 3.

their original positions. Small votive bowls were found on the floor of the basin. The monument is dated to the later part of the Hittite empire, probably to the period of Tuthaliya IV.²²

One theory suggested that two stelae, Aslantaş and Fasıllar, were erected on top of the monument,²³ but this has been disproved: their dimensions differ from those of the monument.²⁴ Later, the monument was considered to be a podium for a throne.²⁵ This idea too was criticised: the stone building was not strong enough to carry such a heavy weight²⁶ and no other figures could have been set above the winged sun disc.²⁷

Eflatun Pınar appears to have been a spring sanctuary with religious significance. It has been suggested that the enthroned couple on the façade are the Sun God and the Sun Goddess of Arinna.²⁸ Thus, the monument was equated with a KASKAL.KUR.²⁹ When the official gods of the Hittite empire are brought into consideration, these figures might also have represented the Sun Goddess of Arinna (^PHepat) and the Weather God (^DTeššub).³⁰ The three mountain gods at the bottom, through which water had flowed, reflect the connection of mountains and water.³¹ Thus, the male god in the inner scene may represent the Weather and / or the Mountain God. The smaller goddesses on each side are supposed to be spring goddesses.

In Central Anatolia, various ponds dating to the Hittite empire seem to have been built as reservoirs for agricultural purposes.³² However, they are also supposed to have been used during rituals.³³ In the Hittite capital Ḫattuša, ponds were built in the Upper City to supply water from springs.³⁴ One of these ponds, the so-called sacred pond (*Heiliger Teich*), was bordered to the north by an earthen dam, into which two chambers were built. Inscriptions and a

²² Bittel 1953, 4; Naumann 1971, 73; Börker-Klähn 1982, 252.

²³ Mellaart 1962, 114-15. Mellaart suggested Aslantaş (Orthmann 1964, 224-25, fig. 2; Alexander 1968) to be the throne of the Sun Goddess flanked by a pair of leopards and Fasıllar (Börker-Klähn 1982, 83-85, 248-49) to be the throne of the Mountain God flanked by a pair of lions.

²⁴ Orthmann 1964, 225-29; Alexander 1968, 84-85; Naumann 1971, 442; 1974, 474; Kohlmeyer 1983, 38.

²⁵ Archi 1966, 76-83, 107-20.

²⁶ Behm-Blancke and Rittig 1970.

²⁷ Naumann 1971, 443; Bittel 1976, 225.

²⁸ Bittel 1953, 4; Laroche 1958, 44-45; Naumann 1971, 444; Börker-Klähn and Börker 1976, 34-37; Börker-Klähn 1982, 252.

²⁹ Börker-Klähn 1993, 353.

³⁰ Güterbock 1946, 487-88; Laroche 1952, 115, 118; Macqueen 1959, 178-80.

³¹ Özener 2001, 539-40.

³² Emre 1993, 1-15.

³³ Kohlmeyer 1983, 35 n. 286; Bittel 1984, 13-14.

³⁴ For the dam at Südburg, see Neve 1991, 343-44; Seher 1997, 331-37.

relief of the Sun God were carved in the stone walls of one of these chambers. As a ^DKASKAL.KUR is mentioned in the inscription and a pit was found under the relief, the chamber is supposed to represent an entrance to the underworld.³⁵ A large number of cult vessels³⁶ found in the debris of several ponds at Hattuša point to ritual activities carried out there. Hittite texts mention sacred ponds used for incantation rituals to remove harmful substances from gardens.³⁷ Rain-making ceremonies are also suggested to have been carried out at these ponds.³⁸

SPRING SANCTUARIES IN MOUNTAINS

Sanctuaries in the mountains associated with pools also reflect the mountain-and-spring cult of the Hittites. One of these sanctuaries in western Anatolia, Akpınar, known as 'Niobe at Sipylos', lies in the north-eastern foothills of the Manisa Mountains south of the Gediz River, on a lime stone cliff half-way up the steep slope facing the Gediz Plain (Fig. 4). Below the monument, there is a pond filled with water from a spring spouting forth near the façade.³⁹ In a niche in the rock, a figure *en face*, supposedly a mother goddess on a throne, was carved in high relief.⁴⁰ Later the figure was interpreted as a standing mountain god⁴¹ and then as a weather god sitting on a mountain.⁴² The relief is dated to the Empire period, and the inscription on the exterior of the niche is read as 'Prince Kuwatnamuwa'.

Taken together, the relief facing a pond, the presence of numerous nearby springs and the rain capacity of the mountain together are characteristic of the Weather God co-operating with a mountain god.⁴³ The figure seems to have been carved especially on this face of the rock because of the nearby spring.

³⁵ Neve 1990, 279-86; 1991, 338-44, figs. 6, 43-46; 1994, 291-94. Springs, rivers, wells, pools, caves and pits were believed to be entrances to the netherworld (Haas 1976, 198-02; Macqueen 1959, 173), and ^DKASKAL.KUR is translated as 'artificial entrance to the netherworld' (Hawkins 1995, 23, 44-45).

³⁶ Neve 1991, 344; 1994, fig. 5; Seeher 1997, 337; 2001, 343, 348, 353, 360; 2002, 61-66, fig. 7. The so-called sacred pond, the ponds on Büyükkale, the basin near Temple 11 and the southern ponds.

³⁷ Haas 1988, 128, 130-31. The clay figurines of the gods and sampled earth from the garden were put with magical substances in a model boat which sailed from a basin through a channel into the river.

³⁸ Neve 1971, 13-19, 31-38.

³⁹ Bittel 1939-41, 189, fig. 10; Güterbock 1956, 53; Kohlmeyer 1983, 28.

⁴⁰ Bittel 1976, 183, figs. 204-205; Börker-Klähn 1982, 107.

⁴¹ Spanos 1983, 482.

⁴² Kohlmeyer 1983, 31.

⁴³ Börker-Klähn 1982, 107.

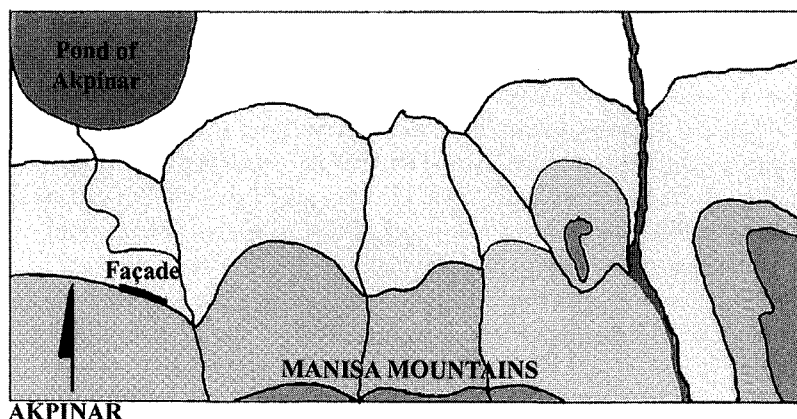


Fig. 4. Plan of Akpınar (after Güterbock 1956, fig. 1).

Therefore, it has been suggested that the monument was a spring sanctuary,⁴⁴ probably used for ritual purposes in the course of a fertility cult.

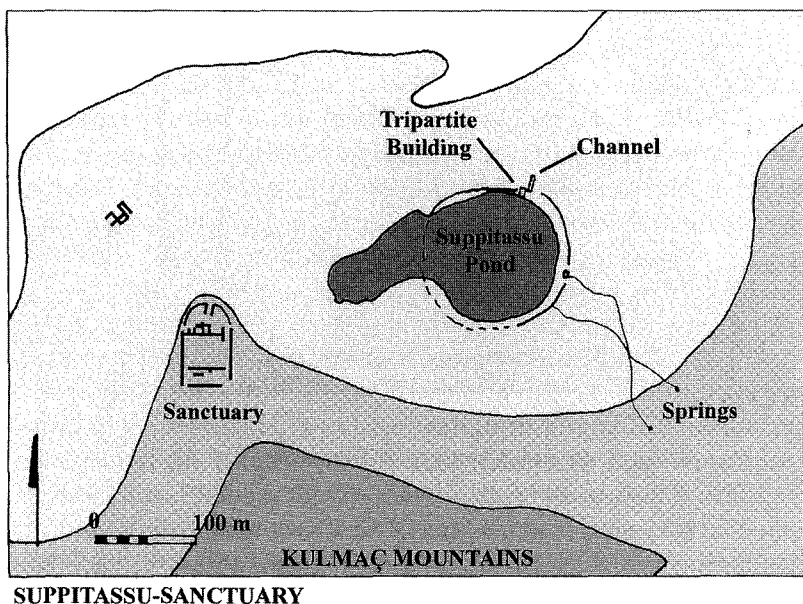
At similar monuments of the second half of the 8th century BC, one on a cliff above the Ivriş River and the other on the Ambar River, a weather god was worshipped.⁴⁵ The latter river together with various springs originating from a rocky cleft provides water for the rich fruit orchards of the plain. King Warpalawas of Tuwanuwa was carved worshipping the Vegetation and Weather God, ʾTarḫu. The god holds a sheaf of corn in his left hand and a bunch of grapes in his right. Here the rain-bringer, ʾTarḫu, co-operates with spring water.

Another type of spring sanctuary consists of architectural remains and pools on mountain terraces. The Šuppitaššu sanctuary on the northern edge of the Kulmaç Mountains is one of the best examples of this type. It is near an artificial pool fed by springs, about 2.5 km to south of Kuşaklı, the Hittite city of Sarissa (Fig. 5).⁴⁶ The pool is circular and has a stone embankment. At the northern edge is a dam with a channel 1.90 m wide leading to the north, flanked on both sides by large limestone slabs. The construction is of Hittite style and two sherds found in the channel are also dated to the Empire period. Stone foundations of a small tripartite structure lean towards the dam; those of a

⁴⁴ Barnett 1953, 80-82; Güterbock 1956, 54; Kohlmeyer 1983, 34.

⁴⁵ Gelb 1939, pl. 46; Macqueen 1959, 178; Orthmann 1971, 241, 487, pl. 144c; Bittel 1976, 237, 289-91, figs. 269 and 327-29; Börker-Klähn 1982, 107, 330.

⁴⁶ Müller-Karpe 1997, 118-20; 1998, 152-53, fig. 34; 1999, 82-86, fig. 20; Ökse 1999.



SUPPITASSU-SANCTUARY

Fig. 5. Plan of the *Šuppitaššu* sanctuary (after A. Müller-Karpe 1999, fig. 20).

building whose ground plan resemble that of a Hittite temple, have been identified on a natural elevation to the west of the pool. The building measures 48×75 m, and the central court of about 32×30 m is paved with stones. On the southern side of the court are two monolithic limestone blocks.

Cuneiform texts⁴⁷ found in Kuşaklı mention two festivals celebrated to honour the Mountain God, Kupit: to celebrate the spring festival, the king goes up to the *huwaši* stones of the Weather God near Sarissa to celebrate the spring festival; the autumn festival is a harvest feast. Another text from Boğazköy describes *huwaši* stones higher up from the city, at the *Šuppitaššu* spring; thus, the building to the west of the pool might be the *huwaši* sanctuary of the Weather God.

A similar circular pool some 60 m in diameter is found at Göllüce at the northern top edge of the Şama Mountains south of the Kızılırmak.⁴⁸ The stone pavement surrounding the pool is similar to that at *Šuppitaššu*. Stone foundations and sherds collected from its vicinity point to a Hellenistic and Roman site; nevertheless, the location of the pool and the masonry of the pavement suggests an earlier construction.

⁴⁷ Müller-Karpe 1996, 307, 312; Wilhelm 1997, 10.

⁴⁸ Ökse 2001, 90.

ROCK SANCTUARIES

One of the best known rock sanctuaries of the Hittites is Yazılıkaya, while another on a rocky hill is Gavurkalesi. These places were chosen as sacred places because of their significant appearance in the landscape and their proximity to springs.

The nucleus of the rock sanctuary of Yazılıkaya near Boğazköy is a rock group with natural chambers (Fig. 6). The sanctuary obtained water from a small valley to the north, which was brought in terracotta pipes to the sanctuary.⁴⁹ The Hittites changed this place to a central open-air sanctuary by carving 65 Hittite gods and goddesses on the rocks. The rock group is suggested to be a *huwaši*.⁵⁰

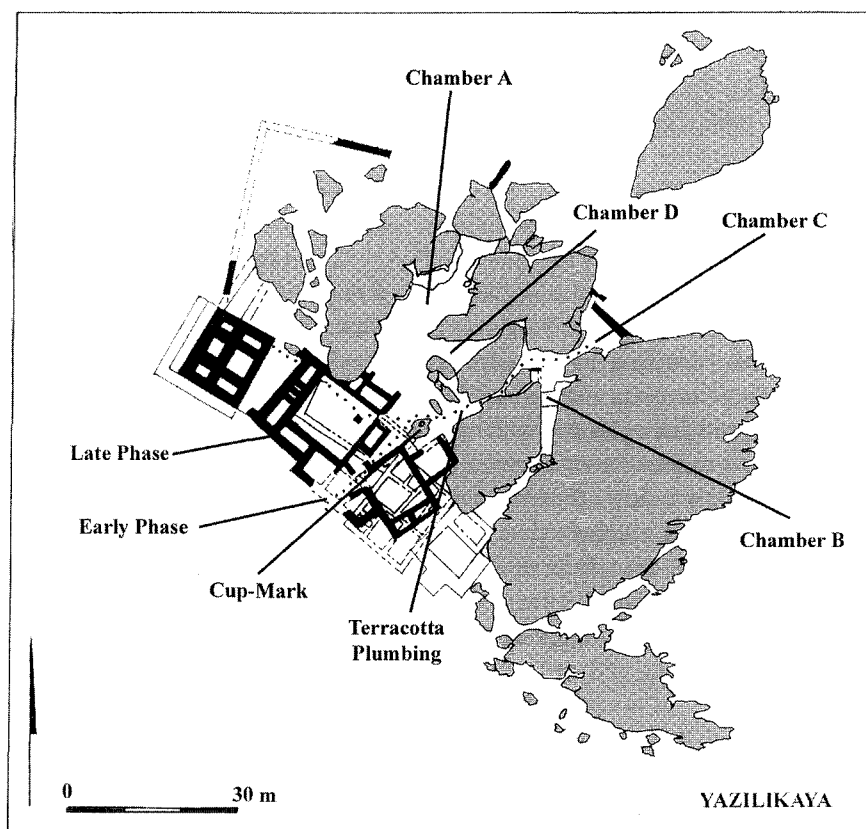


Fig. 6. Plan of the rock sanctuary at Yazılıkaya (after Bittel 1975, Beilage 2-3).

⁴⁹ Bittel *et al.* 1941, pl. 7.3; Damm 1975, 28; Naumann 1975, 117, Beil. 2; Bittel 1989, 34.

⁵⁰ Güterbock 1953, 76 n. 2; Singer 1983, 101.

In the 15th century BC, a wall was built at the southern entrance of the main chamber to support a terrace (Period A).⁵¹ No reliefs were carved during this period. Thus, the rituals must have been carried out in front of the statues of gods, as recorded in various texts. An entrance complex was built in the 13th century BC (Period B), leading to the old terrace, which then became the court with a wash-house, an altar for offerings, a pillared hall and several rooms.⁵² In Period D, these buildings were renewed. On the right of the entrance to the main chamber is the relief of Tuḫaliya IV, who might have commissioned the sanctuary's carved reliefs.⁵³ On its western façade 40 gods of the Hittite pantheon are carved in low relief, while on its eastern façade there are 20 goddesses.⁵⁴ Rock platforms in front of these reliefs seem to have been used during ceremonies and on the platform in front of reliefs 25-33 there are three fire places (Fig. 7).⁵⁵ The main scene is situated on the northern façade opposite the entrance (Fig. 7). Here, ^DTeššub, the head of the pantheon, and his wife, ^DḪepat, face each other, surrounded by a total of seven deities including their son ^DŠarumma.

The small chamber B is reached via a narrow corridor, which is guarded by two demons in relief. A base – possibly for a statue of Tuḫaliya IV – is situated at the northern end of the chamber.⁵⁶ A relief on the western façade shows 12 warrior gods. On the eastern façade three depictions are found: the cartouche of Tuḫaliya IV, Tuḫaliya IV embraced by ^DŠarruma, and ^DNergal in the form of a sword with a handle formed by four lions. Niches were carved into the rock faces in both chambers. The smallest chamber of the sanctuary is chamber C, in which ash deposits have been found. In the rock-split chamber D incantation tools were discovered.⁵⁷ On a rock in front of this chamber is a cup mark, probably used for libations.⁵⁸

Chamber A was interpreted as a place for the spring festival⁵⁹ – according to cuneiform texts describing the AN.TAḪ.ŠUM festival, the procession took place at a sanctuary outside the city walls – but also perhaps as a sacred place for the assembly of gods cited as witnesses in political documents,⁶⁰ or for the

⁵¹ Naumann 1971; 447, fig. 584; Bittel 1975, 248-49; Neve 1989, fig. 1.

⁵² Bittel *et al.* 1941, pl. 39; 1975, 249; 1976, 203, 208; Naumann 1971, 445, 450, figs. 585 and 589.

⁵³ Laroche 1952, 121-23.

⁵⁴ Bittel 1975; 1976, 203, figs. 232-235, 238-241; Bittel *et al.* 1941.

⁵⁵ Bittel 1975, pl. 8.1; Bittel *et al.* 1941, pl. 10.2, 39; Börker-Klähn 1995, 89.

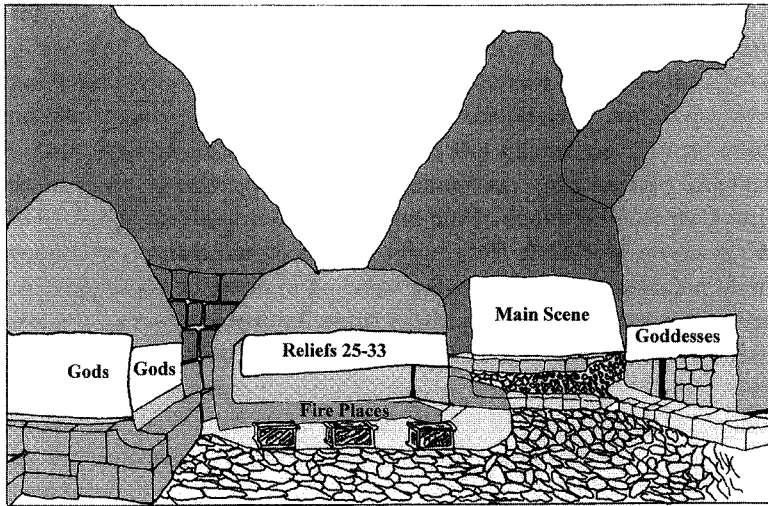
⁵⁶ Neve 1989, 350-51.

⁵⁷ Hauptmann 1975, 62-75.

⁵⁸ Ussishkin 1975, 91, fig. 7.

⁵⁹ Bittel 1975, 254; 1976, 210; Neve 1989, 350-51.

⁶⁰ Bittel *et al.* 1941, 146-47.



YAZILIKAYA

Fig. 7. Reconstruction of Chamber A at Yazılıkaya (after Bittel 1975, pl. 8.1).

coronation ceremonies of the Hittite kings.⁶¹ Cuneiform texts record that evocation rituals against sorcery took place outside the city walls, at a river or a spring in the mountains. The description of these rituals indicates that the main chamber resembles the stage for them.⁶² Chamber B is supposed to be used for the ancestors' cult, especially for Tuthaliya IV,⁶³ since his son Šuppiluliuma II states: 'I had an everlasting sanctuary built and I ordered them to make an image. Then, I brought this image in the everlasting rock sanctuary, and erected it.'⁶⁴ This chamber, it has been suggested, may be related to NA₄-*hekur*-, the '(Divine) Stone House' for funerals of the Hittite kings and for offerings to the souls of the ancestors.⁶⁵ Cuneiform texts record that during the AN.TAḪ.ŠUM festival the king also visited the tomb of his ancestors.⁶⁶ Thus, both chambers A and B could have been used together. Chamber B is sometimes also supposed to be ^DKASKAL.KUR,⁶⁷ while the interpretation of chamber C as a

⁶¹ Haas 1985, 269-77; 1994, 639.

⁶² Haas and Wäfler 1974, 211-20, 225.

⁶³ Güterbock 1953, 74-76; Otten 1963, 22; Bittel 1975, 255; 1976, 210; 1989, 38; Neve 1989, 345.

⁶⁴ Güterbock 1953, 75-76; Otten 1963, 16-17; Bittel 1975, 256.

⁶⁵ Bittel 1989; Haas 1994, 244-45; van den Hout 2002, 74, 88.

⁶⁶ Bittel 1976, 210.

⁶⁷ Damm 1975, 28; Naumann 1975, 117; Hawkins 1998, 76.

crematorium⁶⁸ is less likely. The finds in chamber D point to its function as a place for evocation rituals.⁶⁹

The rock sanctuary of Gavurkalesi is 60 km south-west of Ankara, between the rough landscape of Haymana and the Konya Plain, at a limestone outcrop in a range of hills. The rocky hill is in the narrow valley of a tributary of the Babayakup. In the vicinity are numerous springs providing water in all seasons. The steep southern face of the limestone outcrop has a façade 16 m high some 60 m above the valley floor. Carved on it are an enthroned goddess and two armed male figures; they face her standing in poses of adoration.⁷⁰ A ramp leading to these reliefs from the eastern slope is supposed to be a processional way,⁷¹ whilst the flattened area of 6 × 4 m to the left of the relief might be a platform, probably for placing offerings and figurines of deities⁷² during ceremonies. At the quadrangular plateau on the summit, there is a structure of 35 × 37 m (Fig. 8),⁷³ built of basalt/andesite cyclopean blocks in the style of Hittite masonry. In the north wall of the structure, a vaulted subterranean chamber measuring 3 × 4.65 m was constructed of monolithic stones. It is reached by a stairway.⁷⁴

The reliefs are dated to the 14th or 13th centuries BC⁷⁵ and sherds collected from the southern slope⁷⁶ support this. The scene on the southern façade is supposed to be the Hittite king facing the 'Sun Goddess of Arinna', accompanied by the Weather God.⁷⁷ The cyclopean structure on the summit is considered to be a sanctuary with a tomb.⁷⁸ The suggestion commonly made is that it was a central sanctuary, a 'stone house' (NA₄-*hekur*-) for the cult of the dead and a place for the spirits of deceased Hittite kings.⁷⁹

⁶⁸ Börker-Klähn 1995, 89-90, fig. 6.

⁶⁹ Hauptmann 1975, 65-70; Kohlmeyer 1983, 66.

⁷⁰ von der Osten 1933, 56-82; Bittel 1976, 113-14, 186, figs. 105-106, 199-200; Kohlmeyer 1983, 43-44, fig. 15-17.

⁷¹ von der Osten 1933, 77.

⁷² Kohlmeyer 1983, 46-47.

⁷³ von der Osten 1933, fig. 56; Naumann 1971, 473, figs. 612-613; Lumsden 2002, 115-21.

⁷⁴ Lumsden 2002, 115, figs. 10, 13.

⁷⁵ Bittel 1976, 178-79.

⁷⁶ Lumsden 2002, 116-17.

⁷⁷ Haas 1976, 204; Kohlmeyer 1983, 69.

⁷⁸ Börker-Klähn 1982, 97; Lumsden 2002, 120.

⁷⁹ Osten 1933, 56-90; Naumann 1971, 442, 474; Bittel 1976, 114; 1981, 67; van den Hout 2002, 91; Kohlmeyer 1983, 48; Kühne 2001.

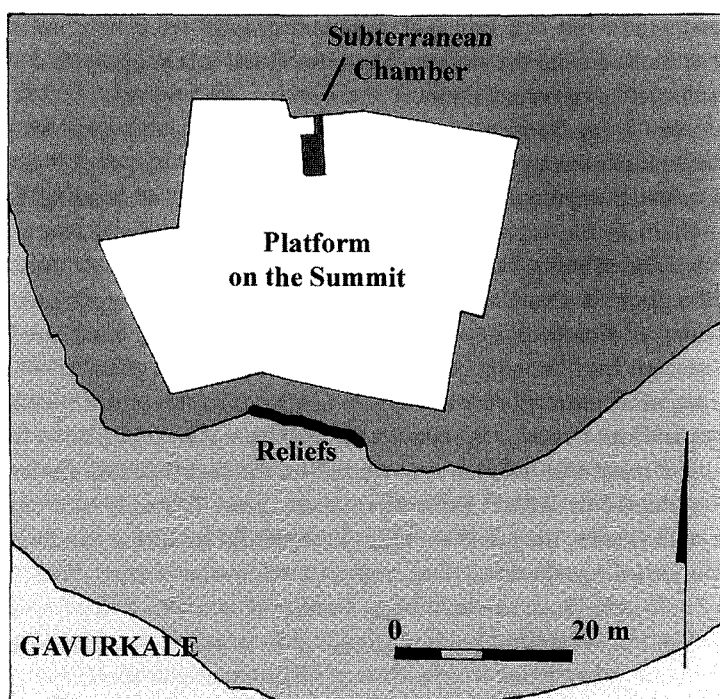


Fig. 8. Plan of the rock sanctuary at Gavurkalesi (after Lumsden 2002, fig. 12).

ROCK FACES

At the junctions of main roads and mountain passes connecting Central Anatolia to the boundaries of the Hittite empire, several reliefs were carved on rock faces near water sources (springs, streams or rivers).

Karabel is the westernmost, dating to the Empire period and located in the Karabel Pass between the Kesme and Mahmut Mountains, connecting the Nif Plain with the valley of the Küçük Menderes. Two low reliefs carved on a limestone rock face represent armed figures,⁸⁰ each in a niche, facing the Karabel spring.⁸¹ Karabel A, which is visible from the road, has an inscription with the name of a local ruler⁸² and very likely marked the northern border of

⁸⁰ Kohlmeyer (1983, 27) dates the relief to 1275-1200 BC, Bittel (1976, 184, fig. 206) to the 14th-13th centuries BC and Börker-Klähn (1982, 94) to 1450-1360 BC.

⁸¹ Bittel 1939-41, 187, fig. 9; 1976, 14; Güterbock 1967, 64-65; Kohlmeyer 1983, 20.

⁸² Kohlmeyer 1983, 18-19, 21-25. For a new reading of the inscription, see Hawkins 1998a.

the kingdom of Mira.⁸³ Karabel B might originally have been related to a chamber or niche facing the stream;⁸⁴ and therefore, it is suggested to be linked to water cult and evocation rituals.⁸⁵

On the road from the Konya Plain to the Mediterranean coast, crossing the Taurus Mountains through the Göksu Valley, there are two rock monuments. Hatip is situated in the Konya Plain on an arterial road leading from the Beyşehir Plain to the region of Kayseri. There are numerous strong springs hereabouts. The relief is on the north face of a cliff about 100 m above the level of the plain. It shows an armed male figure;⁸⁶ the accompanying inscription⁸⁷ identifies him as Kurunta, the king of Tarḫuntašša. Late Bronze Age sherds collected from foundations some 2.50 m to the west of the relief indicate the presence of a contemporary settlement nearby. The other rock monument on the abovementioned road is Keben on the northern side of Göksu valley near a spring. The relief of a woman was carved on the façade either in the time of the Hittite empire or later.⁸⁸ Both monuments were probably stations on the same road. However, they also seem to have served as spring sanctuaries.

The monuments at Fraktın, Taşçı, and those on the Gezbel Pass (Hanyeri and Imamkulu) are close to each other. Fraktın is at a junction of routes from Cilicia to Central Anatolia passing through Tuwanuwa,⁸⁹ one from Kayseri to the Gezbel, the other from Konya through Kummanni to the Euphrates. The rock face is on the north bank of Zamantı, near its confluence with the Enzel (Kara Su). The scene facing the river is divided into two:⁹⁰ on the left, King Ḫattušili III (1275-1250 BC) was carved worshipping either the 'Weather God of the Sky' or his protective god, the 'Weather God of Nerik'; while on the right, Queen Puduḫepa worships ^DḪepat, the 'Sun Goddess of Arinna'. On the plateau are at least two cup marks, probably used for libations.⁹¹ Sherds from the time of the Hittite empire⁹² were collected on two hills, one some 400m north-east of the relief and the other about 2 km north-east. It has been suggested that the relief is a propagandistic representation of the royal couple with a cultic character.

⁸³ Hawkins 1998.

⁸⁴ Bittel 1939-41, 185, figs. 6-7; Kohlmeyer 1983, 28.

⁸⁵ Kohlmeyer 1983, 28.

⁸⁶ Bahar 1996.

⁸⁷ Dinçol 1998a, 161; 1998b, 28-29.

⁸⁸ Taşyürek 1976, 99-100; Börker-Klähn 1982, 263-64; Kohlmeyer 1983, 102.

⁸⁹ Börker-Klähn 1982 102; Kohlmeyer 1983, 67.

⁹⁰ Gelb 1939, pl. 38; Bittel 1976, 173, figs. 194, 196, 198; Kohlmeyer 1983, 69-73, figs. 24-25.

⁹¹ Bittel 1939, 566; Ussishkin 1975, 86.

⁹² Kohlmeyer 1983, 68.

The reliefs of Taşçı are on the south bank of the Dökük, a tributary of Zamantı, to the east of Fraktın. They were carved on a limestone outcrop probably in the 13th century BC.⁹³ On Taşçı I, three figures are shown; while on Taşçı II there is only one. Both probably depict princes or priests,⁹⁴ and are accompanied by inscriptions⁹⁵ mentioning, among others, the name of Hattušili III. Taşçı is supposed to have had cultic functions associated with water, such as purification rituals or the worship of destiny.⁹⁶

The ancient roads from Kayseri to Comana (Hittite Kummanni in Kizzuwatna) and northern Syria went through the Gezbel Pass. There are two rock monuments at the pass, south-east of Erciyes Mountain: Imamkulu at one end and Hanyeri at the other.⁹⁷

Imamkulu is on a terrace of the Zamantı River with a small stream carrying little water at the base of the relief. The reliefs were carved on the convex face of a rounded rock on this terrace. The scene is divided into three.⁹⁸ In the middle is the Weather God in a bull-chariot, deeming on three mountain gods, each standing on lion-headed figures. To the left is an armed man, 'Prince Kuwatnamuwa', and to the right a winged naked woman, probably ^DIštar, in a tree.⁹⁹ The relief is dated to the period of Muršili II (*ca.* 1329 BC).¹⁰⁰ As there is no significant water source, Imamkulu is thought to have played no role in the water cult. Its location and the subject of the reliefs give the impression that the monument might have guarded the pass.

The relief at Hanyeri is on a limestone cliff near several springs.¹⁰¹ It is divided into three parts. On the left, a bull stands on an altar and a mountain god is accompanied by the inscription: 'DŠarruma, the strong king of the mountains'; in the middle is an armed figure, Prince Kuwatnamuwa (from the period of Muršili II); and to the right is another inscription.¹⁰² Situated on an important pass, the monument can be interpreted as a representation of the local king. The representation of the god, 'the strong king of the mountains', and the springs in the mountain point to cultic activities related to incantation rituals¹⁰³

⁹³ Güterbock 1974, 424.

⁹⁴ Bittel 1976, 185, fig. 208. Members of the royal dynasty: Börker-Klähn 1982, 262; priests: Kohlmeyer 1983, 74-75, 78-80, figs. 28-30.

⁹⁵ Gelb 1939, pl. 76; Güterbock 1974, 424.

⁹⁶ Kohlmeyer 1983, 80.

⁹⁷ Wäfler 1975, fig. 1; Börker-Klähn 1982, 97-98.

⁹⁸ Gelb 1939, pl. 42; Bittel 1939, 132; 1976, 182, fig. 203; Kohlmeyer 1983, 81-85, figs. 33-35; Hazenbos 2002.

⁹⁹ Wäfler 1975: 20, 26; Bittel 1976, 182; Börker-Klähn 1977, 71; 1982, 98.

¹⁰⁰ Wäfler 1975, 26; Börker-Klähn 1977, 67-8.

¹⁰¹ Bossert 1954; Bittel 1976, 180, fig. 201; Kohlmeyer 1983, 87-88, fig. 36.

¹⁰² For different readings, see Börker-Klähn 1982, 97; Kohlmeyer 1983, 88-90, fig. 37.

¹⁰³ Kohlmeyer 1983, 90.

There are two monuments on the Ceyhan River. The relief at Hemite¹⁰⁴ is on the steep face of a limestone cliff on the west bank at the southern foothills of the Antitaurus, where the river enters the Cilician Plain. It consists of an armed figure similar to that of Hanyeri, representing a prince of the 13th century BC.¹⁰⁵ Further to the south, on an arterial road, there is another relief: Sirkeli,¹⁰⁶ on the west bank of the Ceyhan in the southern foothills of the Misis Mountains. The Great King Muwatalli (1306-1282 BC) was carved on the steep face of the limestone cliff at Sirkeli.¹⁰⁷ Two cup marks¹⁰⁸ on the rock indicate a ritual function. Both monuments are situated on important roads as well as on river banks and seem to have been significant landmarks with a propagandistic character. Hemite is on a river associated with mountains, indicating a ritual function; the same is true for Sirkeli because of its location on a river bank.

CONCLUSIONS

All the Hittite open-air sanctuaries discussed above are near to natural water sources. Springs and rivers were believed to be able to provide of ritual purification. Therefore most festivals were carried out at such natural water sources, and the offerings were poured into springs. Most of the sanctuaries are at notable rocks or mountains (based on the relation of these natural formations with water and rain). Where there were no rock formations at a significant spring, an artificial façade was built up with monumental stone blocks, such as that at Eflatun Pınar.

The relation of mountain gods with water at Eflatun Pınar reflects the connection of mountain and rain; therefore, its basin might have been a site for the rain cult (like those in the Hittite capital). The monuments, springs and pools associated with mountains also reflect the relation of springs with mountains. Akpınar on a mountain slope, and Šuppitaššu near a mountain peak were connected with pools, and these sanctuaries might also have been venues for the rain cult. Rock sanctuaries at Yazılıkaya, chamber B, and at Gavurkalesi have been interpreted as mausolea on account of their architectural structure or the design of the reliefs. These sanctuaries were also placed near springs.

¹⁰⁴ Bittel 1976, 181, fig. 202; Kohlmeyer 1983, 91-93, fig. 39.

¹⁰⁵ Archi 1971, 71-74; 'Prince xx, son of Tarḫu(nda)piya-' from the reign of Tuthaliya IV: Kohlmeyer 1983, 93-94, fig. 40; second half of the 14th century BC (period of Muwatalli): Börker-Klähn 1982, 98-99, 259.

¹⁰⁶ Garstang 1937, 64-65; Börker-Klähn 1982, 100; Kohlmeyer 1983, 95-96.

¹⁰⁷ Güterbock 1937, 68; Gelb 1939, pl. 68-69; Bittel 1939, 128-29; 1976, 174, 185, figs. 195 and 197; Kohlmeyer 1983, 96-99, figs. 41-42.

¹⁰⁸ Ussishkin 1975, 89; van den Hout 2002, 80, 89-90.

Rock façades at boundaries and on main roads seem to have had two different functions. They might have been carved to express the power of the kings at the boundaries of the Hittite empire, as several reliefs show members of the royal family or local rulers. Sited on main roads, these places could also have acted as land marks. The rock reliefs at Karabel, Hanyeri and Imamkulu are at significant mountain passes, and Fraktın and Taşçı are at river crossings. The almost identical distances between Fraktın, Taşçı and Hanyeri show that they were stations on an arterial road crossing the Antitaurus.

All these rock reliefs face towards springs, pools or rivers, which draws attention to the importance of the combination of rock with water, making these places sacred for the Hittites. Niches, platforms or cup marks were carved on some of the rocks, pointing to ritual activities carried out at these places.

BIBLIOGRAPHY

- Alexander, R.L. 1968: 'The Mountain-God at Eflatun Pınar'. *Anatolica* 2, 77-85.
- Archi, A. 1966: 'Trono regale e trono divinizzato nell'Anatolia ittita'. *SMEA* 1, 76-120.
- 1971: 'Rilievo ittita di Hamide'. *SMEA* 14, 71-74.
- Bachmann, M. and Özenir, S. 2004: 'Das Quellheiligtum Eflatun Pınar'. *AA*, 85-122.
- Bahar, H. 1996: 'Ein neues hethitisches Denkmal in Konya-Hatip'. *Arkeoloji ve Sanat* 73, 1-9.
- Barnett, R.D. 1953: 'The Phrygian Rock Façades and the Hittite Monuments'. *BiblOr* 10, 78-82.
- Behm-Blancke, R.M. and Ritting, D. 1970: 'Der Aslantaş von Eflatun Pınar'. *MDOG* 102, 88-99.
- Bittel, K. 1939: 'Archäologische Funde aus der Türkei 1934-1938'. *AA*, 94-207.
- 1939-41: 'Die Reliefs am Karabel bei Nif (Kemal Paşa)'. *AfO* 13, 181-93.
- 1953: 'Beitrag zu Eflatun-Pınar'. *BiblOr* 10, 2-5.
- 1967: 'Karabel'. *MDOG* 98, 7-21.
- 1976: *Die Hethiter. Die Kunst Anatoliens vom Ende des 3. bis zum Anfang des 1. Jahrtausends vor Christus* (Munich).
- 1981: 'Hittite Temples and High Places in Anatolia and North Syria'. In Biran A. (ed.), *Temples and High Places in Biblical Times* (Proceedings of the Colloquium in Honor of the Centennial of Hebrew Union College, Jewish Institute of Religion, 14-16 March 1977) (Jerusalem), 63-71.
- 1984: *Denkmäler eines hethitischen Großkönigs des 13. Jahrhunderts vor Christus* (Anzeiger für die Altertumswissenschaft 38) (Opladen).
- 1989: 'Bemerkungen zum hethitischen Yazılıkaya'. In Emre, K., Hrouda, B., Melink, M. and Özgüç N. (eds.), *Anatolia and the Ancient Near East. Studies in Honor of Tahsin Özgüç* (Ankara), 33-38.
- Bittel, K., Boessneck, J., Damm, B., Güterbock, H.G., Hauptmann, H., Naumann, R. and Schirmer, W. 1975: *Das hethitische Felsheiligtum Yazılıkaya* (Boğazköy-Hattuša IX) (Berlin).

- Bittel, K., Naumann, R. and Otto H. 1941: *Yazılıkaya. Architektur, Felsbilder, Inschriften und Kleinfunde (WVDOG 61)* (Osnabrück).
- Börker-Klähn, J. 1977: 'Imamkulu gelesen und datiert?'. *ZAss* 67, 64-72.
- 1982: *Alt Vorderasiatische Bildstelen und Vergleichbare Felsreliefs* (Mainz).
- 1993: 'Noch einmal Iflatun Pınar'. In Mellink, M.J., Porada, E. and Özgüç, T. (eds.), *Aspects of Art and Iconography: Anatolia and its Neighbours. Studies in Honor of Nimet Özgüç* (Ankara), 339-55.
- 1995: 'Auf der Suche nach einer Nekropole: Hattuša'. *SMEA* 35, 69-92.
- Börker-Klähn, J. and Börker, C. 1976: 'Eflatun Pınar. Zu Rekonstruktion, Deutung und Datierung'. *Jdl* 90, 1-41.
- Bossert, H.T. 1952: 'Das H-H Wort für Malstein'. *Belleten* 16/64, 495-545.
- 1954: 'Das Hethitische Felsrelief bei Hanyeri (Gezbeli)'. *Orientalia* 23, 129-47.
- Damm, B., 1975: 'Yazılıkaya, geologisch gesehen'. In Bittel *et al.* 1975, 23-28.
- Diñçol, A. 1998a: 'The Rock Monument of the Great King Kurunta and its Hieroglyphic Inscription'. In Alp, S. and Süel, A. (eds.), *III. Uluslararası Hititoloji Kongresi Bildirileri, Çorum, 16-22 Eylül 1996/Acts of the IIIrd International Congress of Hittitology, Çorum, September 16-22, 1996* (Ankara), 159-66.
- 1998b: 'Die Entdeckung des Felsmonuments in Hatip und ihre Auswirkungen auf die historischen und geographischen Fragen des Hethiterreichs'. *TÜBA-AR* 1, 27-35.
- Emre, K. 1993: 'The Hittite dam of Karakuyu'. In H.I.H. Prince Takihito Mikasa (ed.), *Essays on Anatolian Archaeology (BMECCJ 7)* (Wiesbaden), 1-42.
- Erkanal, A. 1980: 'Eflatun Pınar Anıtı'. In Renda, G., Kongar, E. and Tekin, T. (eds.), *Bedrettin Cömert'e Armağan* (Ankara), 287-301.
- Garstang, J. 1937: 'Explorations in Cilicia. The Neilson Expedition: Preliminary Report'. *AAA* 24, 52-68.
- Gelb, I.J. 1939: *Hittite Hieroglyphic Monuments* (Oriental Institute Publication 45) (Chicago).
- Goetze, A. 1955: 'Hittite Myths, Epic and Legends' and 'Hittite Rituals, Incantations and Descriptions of Festival'. In Pritchard, J.B. (ed.), *Ancient Near Eastern Texts Relating to the Old Testament* (Princeton), 120-28, 346-61.
- Güterbock, H.G. 1937: 'Bemerkungen zu der hethitischen Hieroglypheninschrift von Sirkeli'. *AAA* 24, 66-68.
- 1946: 'Recensiones'. *Orientalia* 15, 482-96.
- 1947: 'Alte und neue hethitische Denkmäler'. *Halil Edhem Hatıra Kitabı* I (Ankara), 48-51.
- 1953: 'Yazılıkaya'. *MDOG* 86, 65-76.
- 1956: 'Notes on some Hittite Monuments'. *AS* 6, 53-54.
- 1960: 'An Outline of the Hittite AN.TAḪ.ŠUM Festival'. *JNES* 19, 80-89.
- 1974: 'Zwei hethitische Zeichnungen'. In *Mélanges Mansel*, vol. 1 (TTKY VII.60) (Ankara), 421-24.
- Haas, V. 1976: 'Die Unterwelts- und Jenseitsvorstellungen im hethitischen Kleinasien'. *Orientalia* 45, 197-212.
- 1985: 'Betrachtungen der Dynastie von Hattuša im mittleren Reich (ca. 1450-1380)'. *AoF* 12, 269-77.
- 1988: 'Magie in hethitischen Gärten'. In Rüster, C. (ed.), *Documentum Asiae Minoris Antiquae. Festschrift für Heinrich Otten zum 75. Geburtstag* (Wiesbaden), 35-41.

- 1994: *Geschichte der hethitischen Religion* (HdO Abteilung 1.15) (Leiden/New York/Cologne).
- Haas, V. and Wäfler, M. 1974: 'Yazılıkaya und der grosse Tempel'. *OrAnt* 13, 211-26.
- Hauptmann, H. 1975: 'Die Felspalte D'. In Bittel *et al.* 1975, 62-75.
- Hawkins, J.D. 1995: *The Hieroglyphic Inscription of the Sacred Pool Complex of Hattusa (Südburg)* (StBoT Beiheft 3) (Wiesbaden).
- 1998a: 'Tarkasnawa King of Mira: 'Tarkondemos', Boğazköy Sealings and Karabel'. *AS* 48, 1-31.
- 1998b: 'Home to the Thousand Gods of Hatti'. In Westenholz, J.G. (ed.) *Capital Cities. Urban Planning and Spiritual Dimensions* (Proceedings of the Symposium Held on May 27-29, 1996, Jerusalem, Israel) (Jerusalem), 65-82.
- Hazenbos, J. 2002: 'Zum İmamkulu-Relief'. In Taracha, P. (ed.), *Silva Anatolica. Anatolian Studies Presented to Maciej Popko on the Occasion of his 65th birthday* (Warsaw), 147-61.
- Jakob-Rost, L. 1963: 'Zu den hethitischen Bildbeschreibungen (II. Teil)'. *MIO* 9, 175-239.
- Kohlmeyer, K. 1983: 'Felsbilder der hethitischen Grossreichszeit'. *APA* 15, 7-154.
- Kühne, H. 2001: 'Gavur Kalesi, ein Ort der Ahnenverehrung?'. In Richter, T., Prechel, D. and Klinger, J. (eds.), *Kulturgeschichten. Altorientalische Studien für Volkert Haas zum 65. Geburtstag* (Saarbrücken), 227-43.
- Laroche, E. 1952: 'Le Panthéon de Yazılıkaya'. *JCS* 6, 115-23.
- 1958: 'Eflatun Pınar'. *Anatolia* 3, 43-47.
- Lumsden, S. 2002: 'Gavurkalesi: Investigations at a Hittite Sacred Place'. In Yener, K.A. and Hoffner, H.A. jr (eds.), *Recent Developments in Hittite Archaeology and History. Papers in Memory of Hans Gustav Güterbock* (Winona Lake, IN), 111-25.
- Macqueen, J.G. 1959: 'Hattian Mythology and Hittite Monarchy'. *AS* 9, 171-88.
- Mellaart, J. 1962: 'The Late Bronze Age Monuments of Eflatun Pınar and Fasillar near Beyşehir'. *AS* 12, 111-17.
- Müller-Karpe, A. 1996: 'Kuşaklı. Ausgrabungen in einer hethitischen Stadt'. *AntWelt* 4, 305-12.
- 1997: 'Untersuchungen in Kuşaklı 1996'. *MDOG* 129, 103-42.
- 1998: 'Untersuchungen in Kuşaklı 1997'. *MDOG* 130, 93-174.
- 1999: 'Untersuchungen in Kuşaklı 1998'. *MDOG* 131, 57-113.
- Naumann, R. 1971: *Architektur Kleinasiens von ihren Anfängen bis zum Ende der hethitischen Zeit*, 2nd ed. (Tübingen).
- 1974: 'Einige Beobachtungen in Eflatun Pınar'. In *Mélanges Mansel*, vol. 1 (TTKY VII.60) (Ankara), 467-74.
- 1975: 'Die Bauanlagen'. In Bittel *et al.* 1975, 91-124.
- Neve, P. 1971: *Regenkult-Anlagen in Boğazköy-Ḫattuša. Ein Deutungsversuch* (IstMitt Beiheft 5) (Tübingen).
- 1989: 'Einige Bemerkungen zu der Kammer B in Yazılıkaya'. In Emre, K., Hrouda, B., Mellink, M. and Özgüç, N. (eds.), *Anatolia and the Ancient Near East. Studies in Honor of Tahsin Özgüç* (Ankara), 345-56.
- 1990: 'Die Ausgrabungen in Boğazköy-Ḫattuša 1989'. *AA*, 267-303.
- 1991: 'Die Ausgrabungen in Boğazköy-Ḫattuša 1990'. *AA*, 299-348.
- 1994: 'Die Ausgrabungen in Boğazköy-Ḫattuša 1993'. *AA*, 289-325.
- Ökse, A.T. 1999: 'Grabungen am Quellteich Šuppitaššu'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 1998'. *MDOG* 131, 86-91.

- 2001: 'Sivas İli 1999 Yüzey Araştırması'. *AST* 18.2, 89-100.
- Orthmann, W. 1964: 'Hethitische Götterbilder'. In Bittel, K., Heinrich, E., Hrouda, B. and Nagel, W. (eds.), *Vorderasiatische Archäologie. Studien und Aufsätze. Anton Moortgat fünfundsiebzigsten Geburtstag gewidmet von Kollegen, Freunden und Schülern* (Berlin), 221-26.
- 1971: *Untersuchungen zur späthethitischen Bildkunst* (Saarbrücker Beiträge zur Altertumskunde 8) (Bonn).
- Otten, H. 1963: 'I. Neue Quellen zum Ausklang des hethitischen Reiches'. *MDOG* 94, 1-23.
- Özenir, A.S. 2001: 'Eflâtlunpınar Hitit Kutsal Anıt-Havuz 1998 Yılı Çalışmaları'. In Wilhelm, G. (ed.), *Akten des IV. Internationalen Kongresses für Hethitologie. Würzburg, 4.-8. Oktober 1999 (StBoT 45)* (Wiesbaden), 532-40.
- Schirmer, W. 2002: 'Stadt, Palast, Tempel. Charakteristika hethitischer Architektur im 2. und 1. Jahrtausend v. Chr.'. In *Die Hethiter und ihr Reich. Das Volk der 1000 Götter* (Bonn), 204-17.
- Seeher, J. 1997: 'Die Ausgrabungen in Boğazköy-Hattuša 1996'. *AA*, 317-41.
- 2001: 'Die Ausgrabungen in Boğazköy-Hattuša 2000'. *AA*, 334-62.
- 2002: 'Die Ausgrabungen in Boğazköy-Hattuša 2001'. *AA*, 59-78.
- Singer, I. 1983: *The Hittite KILAM Festival*, vol. 1 (*StBoT* 27) (Wiesbaden).
- Spanos, P.Z. 1983: 'Einige Bemerkungen zum sogenannten Niobe-Monument bei Manisa (Magnesia ad Sipylum)'. In Boehmer, R.M. and Hauptmann H. (eds.), *Beiträge zur Altertumskunde Kleinasien. Festschrift für Kurt Bittel* (Mainz), 477-83.
- Taşyürek, O.A. 1976: 'The Keben Hittite Rock Relief From Silifke'. *TAD* 23, 99-102.
- Ussishkin, D. 1975: 'Hollows, "cup-marks", and Hittite Stone Monuments'. *AS* 25, 85-103.
- van den Hout, T. 2002: 'Tombs and Memorials: The (Divine) Stone-House and Hegur Reconsidered'. In Yener, K.A. and Hoffner, H.A. jr (eds.), *Recent Developments in Hittite Archaeology and History. Papers in Memory of Hans Gustav Güterbock* (Winona Lake, IN), 73-91.
- von der Osten, H.H. 1933: *Discoveries in Anatolia 1930-31* (Oriental Institute Communication 14) (Chicago).
- Wäfler, M. 1975: 'Zum Felsrelief von Imamkulu'. *MDOG* 107, 17-26.
- Wegner, I. 1978: 'Regenzauber im Hatti-Land'. *UF* 10, 403-09.
- Wilhelm, G. 1997: *Keilschrifttexte aus Gebäude A* (Kuşaklı-Sarissa 1.1) (Rahden, Westphalia).

CHAPTER 10

HITTITE POTTERY: A SUMMARY

Ulf-Dietrich SCHOOP

Abstract

This chapter attempts to present a broad outline of the results that pottery research over the last decades has produced for the Hittite core area in northern Central Anatolia. A description of the ceramic wares is followed by a discussion of the main shapes, their function, and the rare occurrences of decoration. There is a short consideration of the role played by imports from outside the Hittite sphere. The paper concludes with some general observations on the development of Hittite pottery over time, its variation in space, and the formulation of open questions which can only be resolved by future research.

INTRODUCTION

Amongst people looking at Hittite pottery from the outside, be they interested laymen or historians (in the broader sense of the term) working outside the field of Hittite archaeology, one is often confronted with the notion that the Hittite pottery inventory is the product of an artful ceramics industry. Wherever the archaeologist digs a hole into a Hittite settlement, one is led to imagine, he is greeted by plentiful remains of beak-spouted jugs bearing shining red slips and vessels with elaborate relief decoration. Aiding this supposition are the displays in the showcases of archaeological museums and the colour plates of the exhibition catalogues. This notion is not far fetched. Why should the sophistication of Hittite culture, as we know it from the written sources and from other artefact classes, not be mirrored in the ceramic industry as well? The reality, as so often, looks different. The researcher of any Hittite pottery ensemble will find himself confronted with a rather dull assemblage obviously originating from a production process of almost industrial scale, without exhibiting much inspiration. Pottery objects displaying anything close to aesthetic value, although they do exist, are so rare that one cannot call them a general characteristic component of the Hittite pottery tradition.

In Hittite research itself pottery studies have played so far a less important role than in other fields of archaeology. In practice, interest in pottery is generally guided by its value as a powerful dating tool. In the case of the positioning of Hittite archaeological remains, however, there appeared to exist much better alternatives. Especially the existence of clay sealings giving the names of kings, queens or high officials and the mentioning of building activities or destructions in the textual record seemed to offer a much higher degree of chronological resolution. The problems inherent in such an approach became apparent only recently.¹ Before we touch upon some of the more problematic aspects in the interpretation of Hittite pottery assemblages, however, let us turn to a general characterisation of this artefact class. It is important to note in this respect that the term 'Hittite pottery' is understood here as encompassing the material originating from the core area of the Hittite empire, namely from the capital Boğazköy-Ḫattuša and other settlements in the northern part of Central Anatolia. Because of the difficulties of pottery dating, a simple tripartite system is employed here. For the sake of a rough orientation, 'early' may be equated with the 17th and the beginning of the 16th centuries, 'middle' with the 16th and 15th centuries, and 'late' with the 14th and 13th centuries BC.²

THE GENERAL CHARACTER OF HITTITE POTTERY

FABRIC TYPES

The predominant fabric type in any Hittite pottery assemblage is the so-called 'drab ware', an unslipped ware with completely oxidised biscuit and buff colouring. The surface is smoothed without much care. We find this fabric type represented in almost all shapes of the Hittite vessel repertoire excluding only cooking pots and large plates. The non-plastics generally consist of stone grit or sand of medium fraction size. Drab ware appears first with the application of the potter's wheel at the beginning of the Karum period and disappears together with the Hittite ceramic tradition at the end of the Late Bronze Age.

¹ Further comments on this aspect may be found in Schoop 2003; Mielke 2006a, 13-23. See also the different contributions in Mielke *et al.* 2006; and – on a more general level – Zimansky 2005.

² This subdivision is not identical with the usual framework of the 'Old Hittite', 'Middle Hittite' and 'Empire' periods that has been developed on historical and philological grounds. A wholesale adoption of this latter system does not seem to be particularly suitable to describe the development of Hittite material culture. Yet the state of research does not allow the formulation of an authoritative archaeological terminology at this stage.

During the later stages of the Hittite sequence, there are signs of technical deterioration indicated by the appearance of grey surfaces and dark cores.³

Most ceramic studies discuss vessels bearing red or white slips as separate wares. The majority of these pieces is, however, better understood as 'drab ware with slip'. Exceptional is a restricted amount of vessels with white biscuit and non-plastics not otherwise found in Hittite pottery. These may or may not bear an additional white slip. Looking at a finished vessel of this kind it would have been hard to tell the difference from a white-slipped drab-ware piece. Obviously, a different choice of clay and – probably – a different firing method were involved in production here. It may well be that these vessels were not of local manufacture inside northern Central Anatolia. Both the red and white colour classes exhibit a remarkable variation in terms of quality. At the lower end of the range, we find dull, often thinly applied slips. At the opposite extreme are rich and homogeneously applied slips, sometimes burnished to a very high degree. In case of the red-coated examples, this fact led to the hypothesis that vessels treated this way were imitations of sheet metal copper prototypes.

Red and white-slipped vessels appear as early as the final Early Bronze Age in Central Anatolia and continue to be represented side by side through most of the 2nd millennium. There is, however, some degree of temporal variation contained in the relationship of both fabric types. The climax of red-coated vessels – in terms of both quality and quantity – is without doubt the Karum and early periods. White-coated pieces do not appear at this time but in exceedingly small numbers. As time progresses, this proportion is gradually reversed. At the end of the Hittite sequence, red-coated vessels may even have disappeared completely from the archaeological record. In contrast to the red-coated class that is only of medium to low standard during the second half of the Hittite period, the quality of white-coated vessels remains constant over the whole time span.

BOWLS

Several types of shallow bowls are attested throughout the 2nd millennium, although in different relative portions (see Fig. 1).⁴ The oldest of these is a hemispherical bowl with slightly inverted rim (type A). This type, being derived

³ In the pottery studies of the Upper City at Boğazköy this group has been separated from the remaining drab ware under the designation 'Töpferofenware' ('pottery kiln ware'), as it was found there associated with structures of that kind (A. Müller-Karpe 1988; 161-62; Parzinger and Sanz 1992, 68-70). The deterioration of drab ware in late contexts was also noted elsewhere, for example at Norşuntepe (Korbel 1985, 126-28).

⁴ See Schoop 2006 for more detail on the quantitative aspects mentioned here.

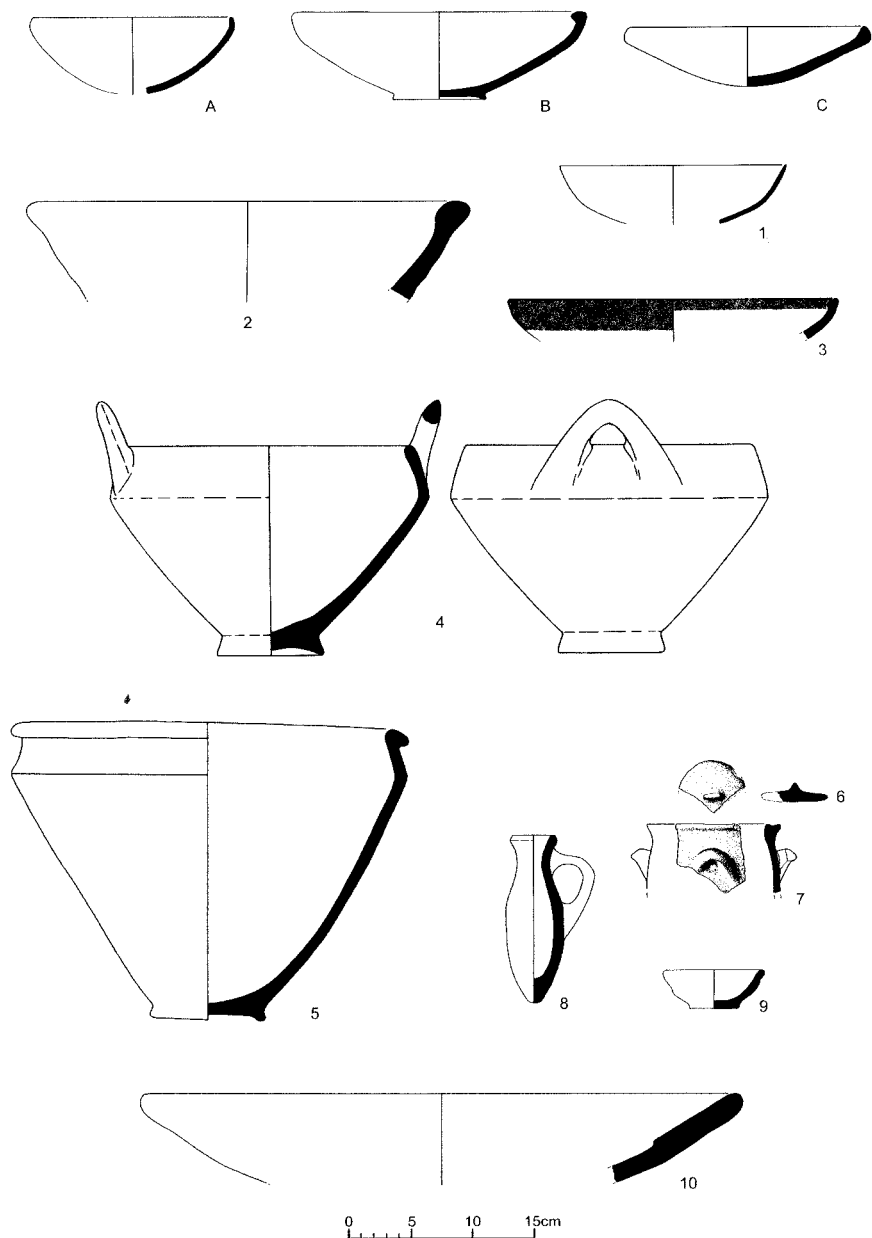


Fig. 1. Boğazköy-Hattuša: (A-C, 1-3) Flat bowls (A: after Fischer 1963, Taf. 90.783 [Unterstadt 3]; B: after Fischer 1963, Taf. 96.875 [Osmankayası stray]; C: valley west of Sarikale; 1: after Parzinger and Sanz 1992, Taf. 58.8 [Unterstadt 1a]; 2: Büyükkaya Northern Gate; 3: Büyükkaya Silo 5); (4-5) Deep bowls (4: after Fischer 1963, Tf. 104.948 [Büyükkale III]; 5: after Seidl 1975, 96, no. 9); (6-7) Small pots and lid (valley west of Sarikale); (8-9) 'Votive' vessels (after Fischer 1963, Tf. 119.1048, 1038 [Büyükkale III a]); (10) Baking plate (valley west of Sarikale).

from handmade Early Bronze Age bowl types, first appears at the beginning of the Karum period. The second type (B) is a bowl with a somewhat shallower profile. It shows a characteristic wedge-like strengthening on the interior of the rim. Bowls of this second type seem to emerge with the beginning of the Hittite sequence proper. The third type (C), finally, may be a development from the second. The rim strengthening is pointed rather than wedge-like, sometimes also termed 'anti-splash rim'. As it appears, likewise, at the beginning of the Hittite sequence, all three types occur side by side. More interesting is the point in time when each of the types reaches the climax of its distribution. For type A, this is the beginning, for type B the middle part, and for type C the later part of the sequence.

The majority of these bowls is always made from drab ware. Although sometimes white or red slips do occur, they have to be regarded as exceptions. With the beginning of the later part of the sequence, there appears a small sized variant of type A bowls with pointed rims and extremely thin walls (Fig. 1.1). These vessels, which deserve the designation 'eggshell ware', are fired to an extreme hardness. Eggshell bowls were obviously a kind of fine ware used during the late period when most of the earlier fine ceramic types had disappeared.

There is another group of deeper bowls with larger diameter and stronger wall thickness than those discussed above (Fig. 1.2). Judging from their wedge-like rims, they seem to be typologically related to the smaller bowl type B. The peak of their distribution equally falls into the middle part of the sequence. It is quite interesting to see that at Kuşaklı a storage room of the representative Building C was virtually crammed with bowls of this type stacked in piles.⁵

Somewhat similar is another type of a still deeper bowl with a pronounced carination and external rim strengthening (Fig. 1.5). It sometimes has two strong handles springing from the rim. This type has its quantitative climax in the middle part of the sequence, as well.⁶ It does not disappear afterwards in a literal sense but develops into a type of deep pot discussed below.

In the early part of the sequence, on the other hand, we see a range of deep bowls of a type inherited from the preceding Karum period (Fig. 1.4). They display a deep carination with a long inverted upper part that often carries a red slip. These bowls may be fitted with opposing horizontal handles which, rising high above the rim, are of triangular shape and angular in section. This type seems to disappear soon after the establishment of the Old Hittite kingdom.⁷

⁵ V. Müller-Karpe 1998, 112.

⁶ Figure on the relief-decorated Bitik vase (Özgüç 1957, pl. III) seems to carry such a bowl covered with a piece of skin or cloth.

⁷ These vessels are also called 'Ferzant bowls' after a Hittite cemetery in the Çorum district (Özgüç 1986).

On a general level, flat bowls show an organic development, with types rising and falling out of use through time in a more or less linear fashion. The conspicuous decrease of medium sized deep bowls in the Empire period, however, is a phenomenon that has yet to be explained.

PLATES

A typical component of Hittite pottery assemblages is the flat plate of very large diameter – reaching up to 80 cm (Fig. 1.10). Characteristics are thick walls and relatively broad thickened rims. As replication experiments show, the main body was handmade first while the rim was added in a second step.⁸ Often we see one or several string impressions running horizontally around the rim. These strings were attached in order to prevent the heavy vessel walls from sagging during the forming process. The fabric resembles more that of the



Fig. 2. Boğazköy-Ḫattuša: Portable oven on a baking plate from the Lower Plateau of Büyükkaya (Boğazköy Expedition, photographic archive).

⁸ Mielke 2006a, 137-40 with fig. 130.

cooking pots then that of the remaining vessel types. The clay is tempered with a high amount of coarsely crushed limestone. Firing must have been carried out without atmospheric control, as the cores are generally not oxidised. Most probably, it took place in pits or even in open fires. These features are indicative of vessels meant to resist large temperature fluctuations as they typically occur when being exposed to open fire or glowing charcoal.⁹ Indeed, the surfaces often show traces of secondary burning. Therefore, it may be assumed that the plates served as devices for baking bread, most probably of the flat pancake-like varieties known in modern Turkey as *yufka* or *pide*. This interpretation is strengthened by the discovery of such a plate at Kinet Höyük that remained inside the oven when abandoned.¹⁰ There were other uses of these plates, too, as illustrated by a find from Boğazköy-Büyükkaya, where one large plate served as a device for carrying a small domed *pisé* oven (Fig. 2).¹¹ These plates appear only after the Karum period. They may be a Hittite development of the flat-based baking trays that served the purpose in the early 2nd and 3rd millennia.¹² At the very end of the Hittite sequence, they tend to become smaller and to be made and fired like ordinary drab-ware vessels.

SMALL VESSELS

There is a range of small vessels with S-shaped profiles and slightly pointed bottoms or ring bases (Fig. 1.7). According to their proportions, they may appear as cups, beakers, small pots or flasks, often with one or two vertical handles at the rim or the shoulder. Their quantitative climax seems to have been in the middle period. During that time, they sometimes carry vertically perforated horseshoe lugs for suspension and narrow ledges at the interior of the rim. The latter served as rests for the small lids which appear in this period (Figs. 1.6; 3).

Quite distinctive is the type group usually known as 'votive vessels'. They mostly appear as bowls with a conical profile, to a lesser degree also as one-handled juglets or flat bowls (Fig. 1.8-9). They are always of careless manufacture which may result in slightly asymmetrical shape or irregular rims. The conical bowls' bottoms are simply wire-cut after shaping and not worked over again so that the finished vessels often have no secure footing. These miniature vessels have received their name from the fact that they are often found in

⁹ Rice 1987, 229-30, 366-68.

¹⁰ Gates 2006, 306 n. 19.

¹¹ Secher 1995, 610 Abb. 12-13, 612.

¹² Mielke 2006a, 141-43.



Fig. 3. Boğazköy-Hattuša: Selection of vases from the valley west of Sarıkale (Boğazköy Expedition, photographic archive).

ritual contexts. Large numbers of ‘votive bowls’ appeared, for example in the ‘sacred ponds’ at Büyükkale and in the Upper City, as well as in different temple buildings. This seems to indicate that they have been manufactured especially for sacrifice at these locations.¹³ This view ignores the fact that these vessels also appear regularly in common settlement contexts. A ritual use in the wider sense is not excluded, however. In Hittite art, there are often representations of a seated male person obviously drinking from a small bowl of this type, which he carefully holds with the tips of his fingers.¹⁴ If these bowls served in social or ritual drinking of some – probably intoxicating – liquid,¹⁵ this custom could easily have been a component of the ceremonies conducted

¹³ See Neve 1971, especially 12, 25-27.

¹⁴ This theme appears repeatedly on Hittite relief vases, for example on the İnandık vase (Özgüç 1988, fig. 64.6, 31).

¹⁵ Most likely, this fluid was alcohol-based, maybe wine. Ritualised consumption of alcohol had a long history in Anatolia and the Near East even before the Late Bronze Age (Gorny 1996; Joffe 1998; Weisgerber 2005; Ünal 2005). But note that there are indications for other drugs as well being used and traded in the eastern Mediterranean at this time, for example opium and – possibly – cannabis (von Cranach 1982; Merrillees 1989; Zias 1995; Koschel 1996).

at the official cult places.¹⁶ It appears that these sometimes included the disposal of the bowls after drinking. The votive bowls remind of similar vessels from the final Early Bronze Age, which were the only wheel-thrown vessels at the time.¹⁷ Whether there was continuity of this practice remains insecure, however, as 'votive bowls' seem to be missing in the earlier part of the Hittite sequence.

POTS FOR COOKING AND FOR OTHER PURPOSES

As may be expected, cooking pots are a regular component of Hittite pottery assemblages (Fig. 4.5). They are very easy to distinguish as their manufacture differs decidedly from that of most other vessels and their exterior practically always shows traces of secondary burning. Like the large plates, they were made of clay with a high content of coarse stone grit. They were fired under neutral conditions, resulting in patchy, dark brown surface colours. Unlike the plates, cooking pots are always wheel-thrown. They show a globular shape with incurving hole-mouth rim. Two stout vertical handles on the shoulder served the manipulation of the frequently hot vessels. Being the most vulnerable part, their rim is always strengthened by means of horizontal thickening. During the Karum period, this thickening mostly appears at the interior of the rim, betraying the inheritance of this feature from the handmade cooking pots of the Early Bronze Age. In Hittite times, this 'archaic' trait is progressively replaced by external rim thickening. While the latter is narrow and formless at first, it becomes longer and sharply delimited during the later stages of the sequence.

Other types of pots are equally well represented in Hittite pottery assemblages. In the Karum period and at the beginning of the Hittite sequence, they show large variation in their rim forms, which may be straight, everted or constricted. In the middle part of the sequence, they have given way to a single type with funnel-shaped neck and horizontally everted rim (Fig. 4.1). These pots – displaying an impressive size range – are likely to have served as multipurpose vessels. In pictorial representations, they regularly appear as receptacles for beer consumed through filter-tipped straws by one or more persons.¹⁸ Another pot type increasingly replaces this older one during the second half of the Hittite sequence (Fig. 4.4). The new type shows a very deep carination with

¹⁶ Perhaps in context with the frequently mentioned ritual 'drinking the god'. On the important role the drinking ceremony played in Hittite ritual, see Haas 1994, 669-73.

¹⁷ Orthmann 1963, 78.

¹⁸ Weisgerber 2005; A. Müller-Karpe 1988, 83; 2002, 261.

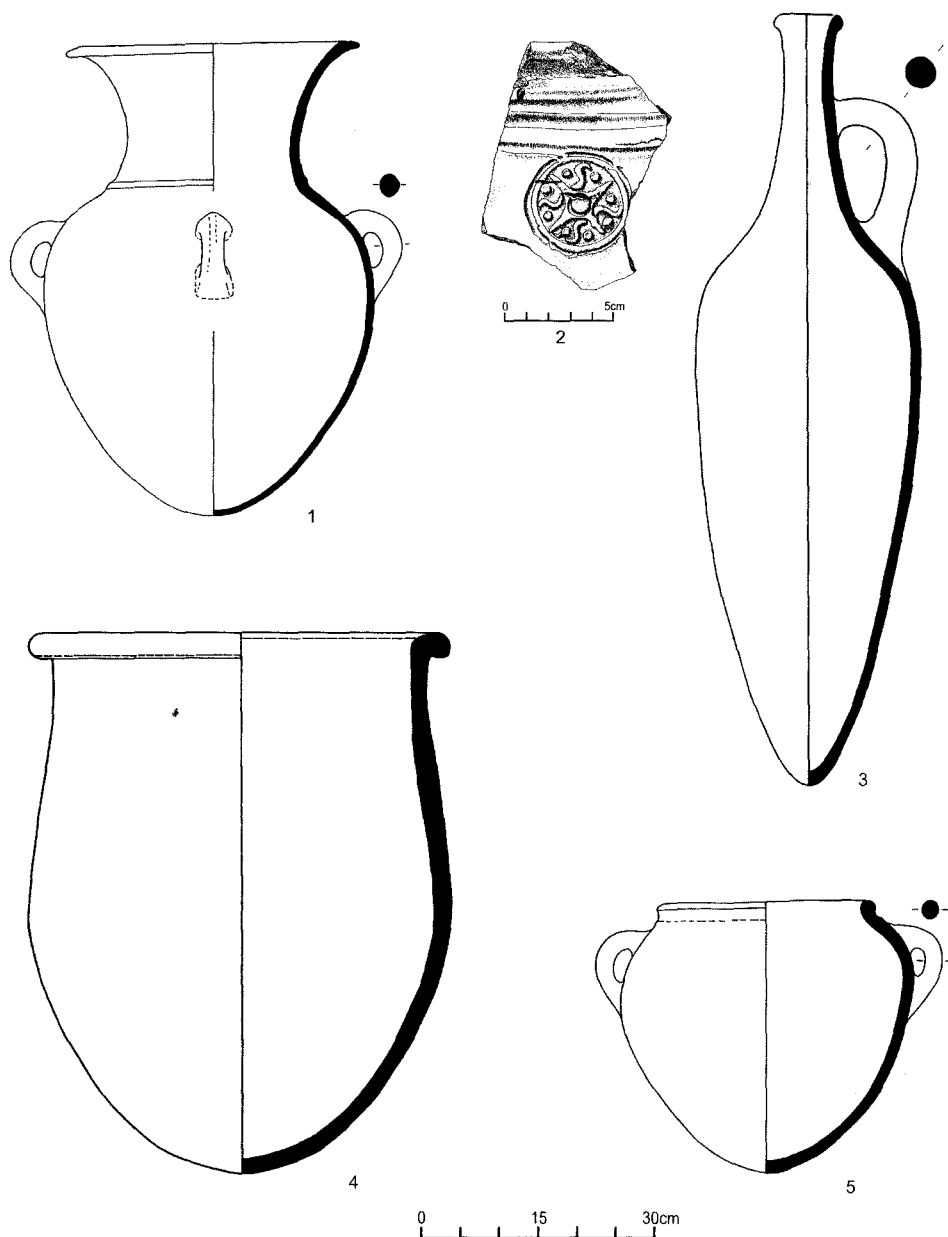


Fig. 4. Boğazköy-Hattuša: (1, 4) Multipurpose pots (1: after Seidl 1975, 103, no. 43; 4: after Parzinger and Sanz 1992, Tf. 17.1 [Oberstadt Temple 10]); (2) *Signe royal* (after Seidl 1972, Abb. 2 A15a [Unterstadt 2]); (3) Storage jar (valley west of Sarikale); (5) Cooking pot (after Seidl 1975, 105, no. 51).

the long upper part rising vertically above, resulting in a deep vessel with a very wide opening. This pot type seems – in a rather unusual manner – to emerge out of a functionally different vessel shape, the carinated bowls mentioned above (Fig. 1.5).¹⁹ The association with the production and consumption of beer, inherited from the older pot type, remains. This is clearly shown by the discovery of a brewery at Kuşaklı with a very distinctive assortment of complete vessels *in situ*.²⁰ As mentioned above, pots could fulfil a broad range of duties. A rather special (and necessarily final) use is their frequent appearance as urns or ‘coffins’ in Hittite graves.²¹

JUGS AND JARS

Beak-spouted jugs are often regarded as the Hittite vessel type *par excellence* (Fig. 5.1). Indeed, a range of the most splendid examples originating from different archaeological sites is housed in museums around the globe. Most of these pieces date to the Karum and early periods. In general, the jugs possess a globular shoulder with a sharp carination below. The long bottom part tapers in a concave way towards a disc-shaped basis. A single handle springs from the vessel shoulder and merges – often with a marked bend – into the back of the rim. The spout steeply rises out of the slender neck and terminates in a pronounced beak. Especially the older jugs often show two wedge-like applications on the front. It is likely that these represent a woman’s breasts and that the Hittites perceived the vessels as anthropomorphic and female in gender. The older examples often bear highly polished red slips. Together with the angular shaping, this led to their designation as ‘toreutic’, as one assumes a strong formal affinity to contemporary metal vessels.²² Although beak-spouted jugs sharply decrease in frequency during the Empire period, they do not disappear completely. Even if the point is hard to prove at this stage, it seems as if this vessel type was not a component of domestic assemblages. This agrees with their frequent appearance on pictorial representations where they are invariably shown as libation vessels, thus belonging to the world of ritual. Somewhat related are similarly shaped jugs with a narrow tubular spout springing from the shoulder (Fig. 5.2). The spout again ends in a beak. This type belongs to the early period.

¹⁹ The high carination of the prototype is sometimes still indicated by a horizontal clay band or a slight bend in the profile, i.e. a typological rudiment that has lost its original purpose.

²⁰ V. Müller-Karpe 2000; 2001a; 2005. The identification of the room as ‘brewery’ was made possible by the botanical finds that unambiguously indicate beer production (Pasternak 2000).

²¹ An example for the funeral use of pottery in cremations is the cemetery at Osmankayaşı (Bittel 1958), in pot burials the cemetery at Yanarlar (Emre 1978).

²² Fischer 1963, 36-41.

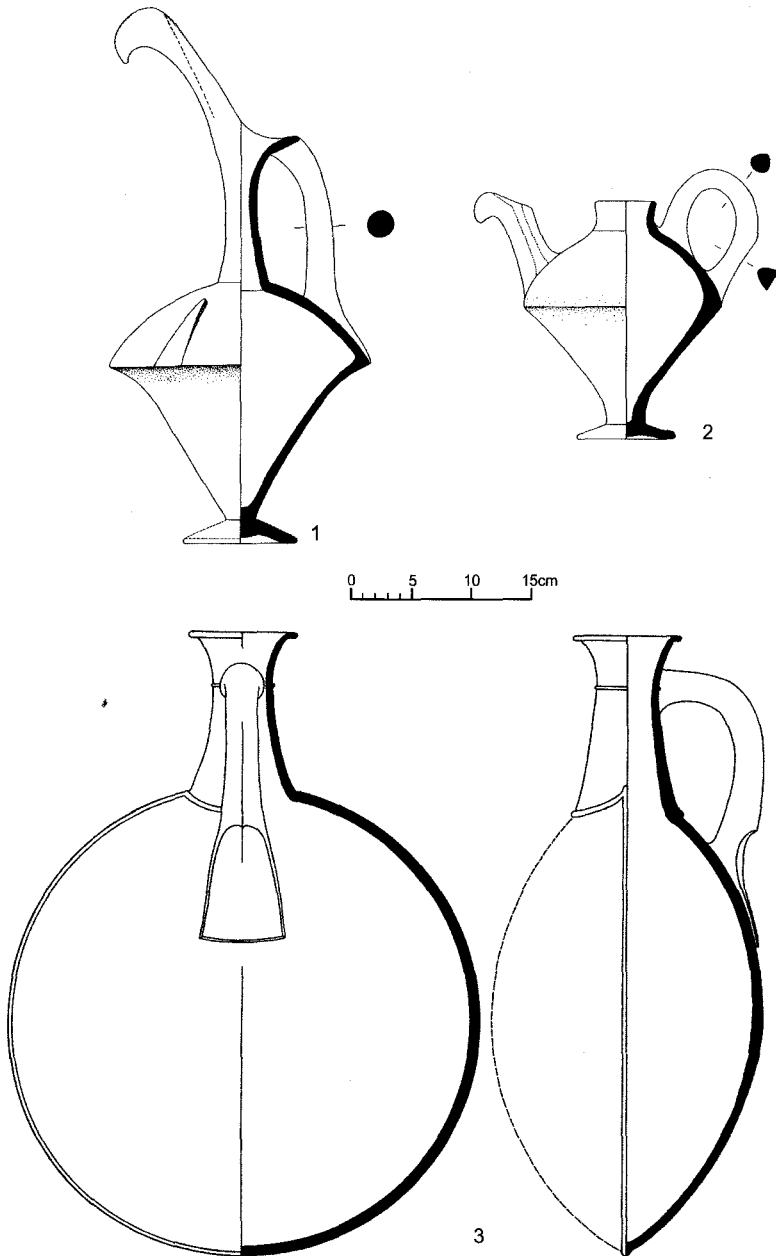


Fig. 5. Boğazköy-Hattuša: (1) Beak-spouted jug (after Neve 1984, 67, Abb. 4.1 [Unterstadt 3c]); (2) Tubular-spouted jug (after Neve 1984, 69, Abb. 6.14 [Unterstadt 3c]); (3) Lentoid flask (after Fischer 1963, Taf. 49.488 [Unterstadt 2]).

A rather special vessel type is the lentoid flask (also known as ‘pilgrim flask’). These flasks always show a narrow neck and handles attached to the shoulder (Fig. 5.3). Their complex manufacture required a high degree of sophistication on the potter’s side.²³ In contrast to most other types in the Hittite pottery inventory, lentoid flasks never appear in plain drab ware. Their surface is always sealed by a highly burnished slip that may be of red or (in most cases) white colour. The reason for this is that they served as containers for fluid or semi-fluid contents. As pictorial representations illustrate, they seem to have been used as travelling accessory, a kind of canteen containing the traveller’s food ration. As in later times, this may have often been a yoghurt-based fresh cheese of high protein and fat content.²⁴ Lentoid flasks first appear during the Karum period. They are represented throughout the Hittite sequence.

Large jars with a strong handle stretching from the narrow neck down to the vessel shoulder seem to have been among the favourite storage facilities in Hittite households (Fig. 4.3). They mostly belong to the plain drab-ware class. Again, the rim part is thickened to prevent chipping and breaking during use. As with the cooking pots, the initially formless thickening develops into a long wedge-shaped rim during time. Their bases show a rounded shape in the beginning but become increasingly pointed during the late period. The strong tapering was facilitated by squeezing the bottom part together after initial shaping. As the potter could not smooth out the interior at this stage anymore, the process left typical twisted clay pillows inside the bottom part. Obviously, these jars could not stand independently. Yet, they were not dug in, either, as this would have prevented their owner from emptying the contents. We generally find them leaning in the corners of storage rooms or cellars of Hittite houses. As the surfaces are not normally sealed, they probably contained water or water-based fluids like wine, but also dry agrarian products that allowed pouring like grain or pulses. Private storage of this kind demonstrates short-range planning at best, a strong indication for the important role of the state in terms of supply, bulk storage and long-range planning on behalf of the household.²⁵

²³ On the two documented *chaînes d’opérateurs* in the manufacture of these flasks, see A. Müller-Karpe 1988, 27-29.

²⁴ Sauter *et al.* (2001) were able to identify physical remains of this kind inside a lentoid flask from Troy VI.

²⁵ See, in this respect, the huge state-controlled grain silos of which a great number has been identified in the capital and increasingly at other Hittite centres as well (Seeher 2000). The above observations apply to urban settlements only, of course. About the situation in the countryside, we are not informed.

SPINDLE BOTTLES AND LIBATION ARMS

Two rather special vessel shapes have to be considered as imports from outside the immediate Hittite culture area. Both are made from a particular fabric type, the so-called Red Lustrous Wheel-Made Ware, which is discussed below. The first type is the spindle bottle, a descriptive term that recalls the elongated shape of this vessel (Fig. 6.3). A tapering neck is attached to the shoulder and ends in a thin disc-shaped rim. A comparatively strong handle springs from the shoulder. The vessel stands on a sturdy hollow base. Although there are still difficulties in tracing the prototypes of the vessel, its place of origin seems to have been the island of Cyprus where spindle bottles manufactured from other ware classes also occur.²⁶ Their function in Hittite contexts is still unclear. An *in situ* find from Kuşaklı, where a spindle bottle was found lying inside a bathtub, seems to support the older suggestion that they served as containers for scented oils or perfumes, maybe also imported from the south.²⁷ The delicate shape of these bottles makes it somewhat questionable, however, whether they were suitable transport containers.²⁸

The second type is the libation arm or, more cautiously, the arm-shaped vessel (Fig. 6.4). Its body consists of a long tapering tube with a ring base at the broader end. Attached to the opposite side is a carefully sculptured hand holding a small hemispherical bowl. By means of the bowl, the vessel body could be filled or emptied. An interpretation as incense burners – as known from Egypt – is unlikely since the bowls never show traces of secondary burning. A function as a libation vessel seems more probable, although there is no positive evidence yet to support this. In contrast to the beak-spouted jug, arm-shaped vessels are never depicted in this function in art. Unlike spindle bottles, arm-shaped vessels do not normally appear in domestic contexts. This fact at least strengthens the supposition that they were used in the context of ritual and cult.²⁹

STORAGE VESSELS

The production of large storage containers, too heavy to be easily moved around like ordinary vessels, goes back into the 3rd millennium BC in Central

²⁶ Eriksson 1993, 25.

²⁷ A. Müller-Karpe 1995, 19-20; Eriksson 1993, 143-44.

²⁸ See Seeher's remarks on this topic: Seeher 2002, 66; and in Kozal 2003, 73.

²⁹ See the recent discovery of what seems to be a temple's pottery refuse, dumped into a dysfunctional water reservoir in the Upper City at Boğazköy. The deposit contained an impressive number of arm-shaped vessels and spindle bottles (Seeher 2001b, 341-62; 2002, 59-70). For references on the different views proposed for the function and possible Hittite designation of the arm-shaped vessel, see Frantz-Szabó 1987; Kepinski 1987; A. Müller-Karpe 1988, 145.

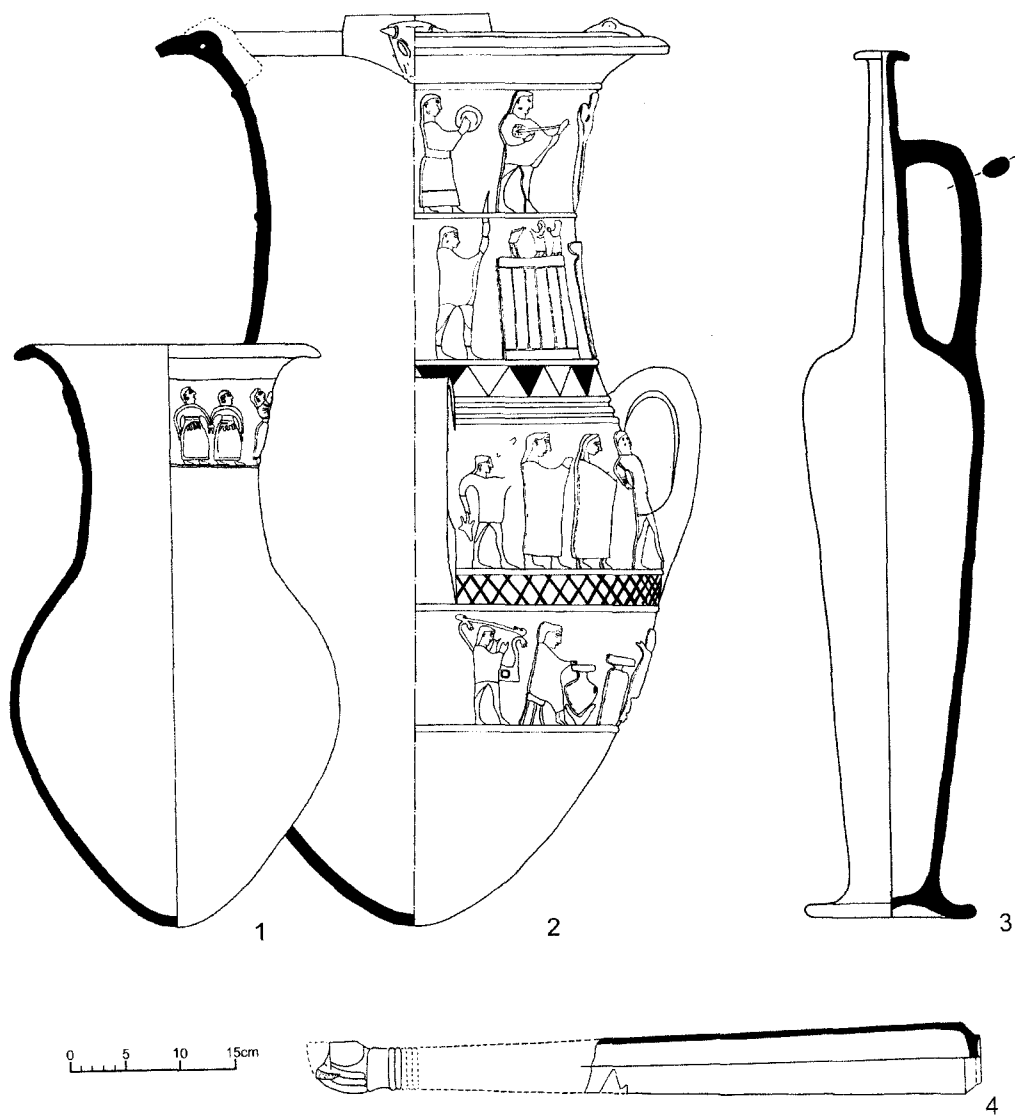


Fig. 6. Hüseyindede Tepesi (1) and İnandıktepe (2): Relief-decorated vessels (after Mielke 2006a, Abb. 141). Boğazköy-Hattuša: (3) Spindle bottle (after Parzinger and Sanz 1992, Taf. 21.5 [Oberstadt Temple 15]); (4) Arm-shaped vessel (after Fischer 1963, Taf. 122.1124 [Unterstadt 1]).

Anatolia. In contrast to their forerunners, which are made from coarse clay with heavy tempering, the pithoi of the 2nd millennium are evenly fired and their fabric does not differ from that of smaller vessels. The manufacture of clay containers of this size required a high degree of technical sophistication.³⁰

One of the oldest types is a group of pithoi with massive beak-shaped spouts (*Pithosschnabelkannen*). They are common during the Karum period but their use does not seem to have been continued far into the Hittite period proper. Because these vessels had to be tipped in order to let their content be poured out of the spout, it is not likely that they have been dug in. As they regularly appear in household contexts, they are probably functionally related to the large jars described above, which are younger.

Besides beak-spouted pithoi there appear still larger storage vessels that were not supposed to be moved again once installed in their place. They reach heights up to 2 m and may have filling volumes approaching 2000 litres. Pithoi of this type are not normally encountered in domestic contexts. Instead, we often find them arranged in long rows inside official storage buildings. Their lower part was sunk into the floor, so that they could easily be filled and emptied through their large orifices. The massive everted rims, often flat on the upper side, made it possible to fasten lids of some kind. An early example of storage structures of this kind would be the Karum period 'pithos building in M/18', and a late one, the magazines of Temple 1, both in Boğazköy.³¹ They were intended for middle-range storage (as opposed to the large silos mentioned above that could remain unopened for years or even decades). While most of the pithoi will have contained dried foodstuffs, some of them were meant for the storage of different kinds of oil whose importance and availability in Hittite culture is well documented.³² It was probably stock of the latter kind, which aided the fire in consuming the palace at Maşat Höyük after an enemy had put it to the torch.³³ One can still feel the rage of this infernal conflagration when looking at the vitrified wall stumps at Maşat.³⁴ After the disintegration of the Hittite state, pithoi disappear from the archaeological record for some time. They were replaced by private storage pits dug into the ground as they had been in use before the Hittites.

³⁰ See Winter's observations on modern pithos manufacture in Crete (Winter 1972).

³¹ Schirmer 1969, 32-36 (pithos building); Neve 1969, 15 Abb. 3 (Temple 1).

³² Hoffner 1995.

³³ Özgüç 1978. See especially the colour pls. A-D. Cf. Özgüç 1982, 74.

³⁴ See, in contrast, the comparatively well preserved remains of Temple 1 at Boğazköy, which seems to have been empty when set alight (Seeher 2001a, 625-26).

POTTERY DECORATION

Hittite pottery is essentially undecorated and monochrome. The painting tradition that characterised the pottery repertoires of the final Early Bronze Age and the beginning of the Karum period in Central Anatolia (the so-called 'Intermediate' and 'Cappadocian' pottery groups) came to an end before the onset of the Hittite period. There are, however, some exceptions from this rule and it is to them that we will turn our attention now.

Relief decoration: Relief-decorated vessels belong to the most spectacular products of the Hittite ceramic industry. Splendid examples are the vases from İnandıktepe and Bitik, augmented now by two new discoveries from Hüseyindede Tepesi (Fig. 6.1-2).³⁵ The vessels bearing this kind of decoration are mostly large pots with flaring necks, like the example illustrated in Fig. 4.1. The relief parts were sculptured separately before being applied to the vessel's surface. Garments are generally given in white, exposed human skin in dark brown colour. Although there are forerunners of the relief technique in the final Early Bronze Age and in the Karum period, multiple narrative friezes first appear in the early period. Represented are always topics from the religious sphere. Unlike the rock carvings at Yazılıkaya, however, we mostly see humans and not supernatural beings depicted on the relief vases. They are arranged in ritual processions with priests and priestesses, gift bringers, musicians, dancers and acrobats participating. Also depicted are transport vehicles, altars and shrines. Animals may be shown as objects of sacrifice or part of games, such as the bull-leaping scene on one of the Hüseyindede vases. Gods may be present in form of their cult images as on the İnandık vase. There are also scenes of a more private nature, usually a male figure opening the veil covering a woman's head. On the İnandık vase there is even a coitus scene represented. According to T. Özgüç, we see here the *hieros gamos*, the holy marriage of the supreme gods of the Hittite pantheon, impersonated in the depicted ritual by the king and the queen.³⁶ Although this may well be the case, it is rather astonishing not to see this central part of the whole narrative iconographically more pronounced.

Somewhat different are the rare representations of gods. Only small fragments of such images have survived. Because of this, we do not know into which kind of composition they were integrated. Most fragments show a chariot

³⁵ See, Özgüç 1988, 84-106 (İnandıktepe); 1957 (Bitik); Sipahi 2000; 2001 (Hüseyindede). The most exhaustive treatment of this artefact class may be found in Boehmer 1983. See Mielke 2006b for a revised dating of the relevant Level IV at İnandıktepe.

³⁶ Özgüç 2002, 251.

drawn by the sacred bulls Šeri and Hurri. Their master, the Storm God Teššub, is just mounting the vehicle.³⁷ A singular fragment from Boğazköy additionally shows sphinxes associated with such a representation.³⁸

Relief-decorated vessels certainly served a purpose outside the ordinary. In several instances, we see plastic bullheads attached to the inside of the rim.³⁹ A pipe integrated into the vessel's wall connects to the heads that serve as outlets. A fluid poured into the pipe would spurt from the bulls' muzzles into the interior of the vessel. In other words, these vessels were libation instruments of some kind.

The artistic climax of relief-decorated vessels certainly belongs to the earlier part of the Hittite era. The further development of this artefact class is still hard to trace due to the scarcity of finds from well-stratified contexts. According to R.M. Boehmer, the rigid composition in superimposed friezes is abandoned in the time following.⁴⁰ The depiction of cultic scenes becomes increasingly replaced by animal representations, mostly bulls and horses. At the end of the Hittite sequence, the reliefs have lost their polychromy. The latest depictions are strongly stylised.⁴¹ They resemble the crude animal-head attachments occurring on vessel handles at this time.⁴²

Another kind of relief decoration is represented by a small group of bowls whose interior is densely covered by hemispheres the size of a pinhead. In most cases, there are traces showing a manipulation of the outer surface. According to R.C. Henrickson, the potters achieved the effect by forcing clay pegs through the outer face into the interior.⁴³

Painting: Painting is a decoration technique that is very rarely found on Hittite vessels from Central Anatolia. In most cases, red or brown paint has been applied in careless strokes of a broad brush on a white slip, often itself of crumbly consistency. The motifs are generally simple like lattice designs, triangle rows or zigzag lines. More complex designs, as exemplified on a large pot from İnandıktepe,⁴⁴ are extremely rare. We may see here influences coming from south-eastern Anatolia where Hittite-type pottery with painted designs

³⁷ Boehmer 1983, 40–42.

³⁸ Seeher 2001b, 352–53; 2002, 65; 2007.

³⁹ For example on the vessel from İnandıktepe (Özgüç 1988, fig. 85, pl. 41). A large number of fragments have been recovered at Boğazköy. They are treated by Boehmer (1983, 47–52) under the heading *Vexiergefäße*.

⁴⁰ Boehmer 1983, 21.

⁴¹ Boehmer 1983, Taf. XLIII.

⁴² Parzinger and Sanz 1992, 62–63.

⁴³ Henrickson 1995, 85–86. I must admit that I find it very hard to see any practical sense in a technique as strange as this.

⁴⁴ Özgüç 1988, 83, 136, figs. 25–26, pls. 35, 84.4.

seems to be more common.⁴⁵ Most of the larger objects belonging to this class date to the early period. This does not necessarily exclude a possible continuation of the technique into later times.⁴⁶

Another region within the Hittite orbit that displays a painting tradition is Cilicia. Here, however, we are dealing with a late development that belongs to the very end of the Late Bronze Age. This phenomenon has been related to the political detachment of Cilicia from the empire's weakening centre at this time and its concomitant cultural reorientation.⁴⁷ In this case, we would see here an essentially non-Hittite feature.

Incision and similar techniques: Incision and related techniques are equally rare. Most of the motifs are of a very simple nature. There are horizontal rows of triangles, which may be cut out or incised with stab filling. Apart from these, we sometimes find circular impressions applied by the aid of hollow tubes.⁴⁸ Painting, incision and impression were also used to fill the relief figures' costumes with 'textile' decoration.⁴⁹ They serve here as an extension and complementation of the master technique. A remarkable find without parallels yet is an incised bowl from the Lower City of Boğazköy whose interior shows the depiction of a warrior with possible Aegean affinities.⁵⁰

Stamp decoration: Most prominent amongst the stamp impressions on Hittite pottery is the so-called *signe royal* (Fig. 4.2). The stamp left a round pictogram in relief with a diameter of 4-6 cm. A raised circle encloses a four-beamed star symbol with a round button in its centre. Between the pointed beams, we find S-shaped flames detached from the centre.⁵¹ The spaces in between may be filled by small spheres. The symbol figures prominently on the shoulders of large red-coated pots or jars. The impression was left unslipped and contrasts strongly with the darker background. The sign seems to be a sun symbol.⁵² Its function on the vessels remains unknown,

⁴⁵ Konyar 2002; 2006.

⁴⁶ An important point to note here is that a group of 'handmade' painted pottery from Boğazköy-Büyükkale (Fischer 1963, 34) and from late contexts of the Upper City (Parzinger 1995) has been found not to be Hittite but Early Iron Age in date (Genz 2003).

⁴⁷ Ünlü 2005, 154-55.

⁴⁸ Fischer 1963, 75, Taf. 127, Taf. 128.1195, 1177.

⁴⁹ For example, on the İnadık vase, see Özgüç 1988, pl. 55.2 (painting), pl. 81 (incision), pl. 80.2 (impression).

⁵⁰ Bittel 1976.

⁵¹ The most comprehensive discussion of stamp marks on Hittite pottery is Seidl 1972. See the same work for the many variations in which the *signe royal* may appear.

⁵² Beran 1965; cf. Beran 1967, 49 n. 7.

however.⁵³ It first appears during the later Karum period but apparently has forerunners going back into the 3rd millennium.⁵⁴ It probably disappears before the onset of the Empire period. Besides the *signe royal*, there are other impressions showing cross, flower and animal motifs. Oval impressions with different 'twig' motifs, hidden under the lower side of jar handles, may refer to the vessels' original contents. In an identical position, we sometimes see finger impressions or multiple notches on cooking pots, which have been tentatively identified as potters' marks.⁵⁵

Decorative slips: Partial slips that cover only the upper part of a vessel's surface are a regular feature in the Hittite ceramic repertoire. The lower limit of the slip is normally situated where the vessel profile displays a pronounced change in direction. The trait is inherited from the Karum period when vessels decorated this way are quite common. It is still pronounced in the early period. The slip is invariably of red colour. White slips usually cover the complete vessel surface. Partial slips occur mostly on deep bowls with sharp carinations, themselves a characteristic of this time. They may also be found on smaller closed vessels. Much less they are encountered on large vessels like beak-spouted pithoi. In the middle of the Hittite sequence, most of the shapes associated with partial slips strongly decrease in frequency. The technique itself appears much less often than before. At the same time, there is a reduction of the vessel types to which it has been applied. In contrast to earlier times, the slip now exclusively covers the strengthened rims of flat (uncarinated) bowls (Fig. 1.3). Although partial slips linger on in the time following, it is still unclear whether they reach the final stage of the Hittite sequence.

A special case is a group of vessels that bear a coat of golden colour. If one examines such pieces under the microscope, it becomes clear that the potter accomplished this effect by the application of a thin wash containing a high amount of minute mica particles in suspension. It has, therefore, received the name 'Gold Ware' in the literature.⁵⁶ Apart from a few cases in which the gold wash has been applied over a white coating, it generally appears directly on the untreated buff surfaces of the vessels. As it rubs off quite easily, it is sometimes hard to recognise. This means on the other hand that the metallic

⁵³ A proposal has been their interpretation as marks applied by the royal administration (hence the name), which is unlikely. The alternative view, explaining them as markers for cult vessels (Seidl 1972, 69), equally has no strong foundation.

⁵⁴ Seidl 1972, 67.

⁵⁵ On 'twigs', finger impressions and notches, see Seidl 1972, 73-76.

⁵⁶ Bittel 1937, 37. For an overview of this ware, see Mielke 2006a, 42-44. It would appear to be more exact to change this designation into 'Goldmica Ware' (*Goldglimmerware*).

appearance of the vessels was much more pronounced at the time they were in use than it is now. Vessels with mica wash are rare. Although there are exceptions, most of them are small vessels, often bowls with shapes differing somewhat from the rest of the assemblage. Together with the fact that micaceous clays are missing inside the Kızılırmak bend, it becomes likely that either the raw material for the coating or – more likely – the vessels themselves were imported from elsewhere. The area of origin is not known but it is tempting to see connections with south-western Anatolia where pottery with mica wash seems to be quite common.⁵⁷ Gold-mica vessels were obviously a type of fine ware. There has certainly been an intended association with vessels made from sheet metal. We should not, however, underestimate the intelligence of the ancients and consider the vessels pure imitations, in use maybe by the second rate of the Hittite *beau monde*. Nobody would have been misled about their true nature and they most likely had a value by themselves. Although we do not yet know very much about this pottery group, its use seems essentially to be a phenomenon of the first half of the Hittite sequence.

Writing on pottery: The Hittites did not usually write on pottery. Exceptions are two hieroglyphic signs, which sometimes appear – separately – on the outer faces of bowls or pots. One of these, a triangle with an internal cross, is the sign for ‘king’. The other one, a sign resembling an arrow, has the phonetic value ‘zi’. A. Müller-Karpe quite plausibly reads the latter as ‘ziti-’ for ‘man’. He draws a connection with the provisions which had to be supplied for certain ceremonies by the king on the one hand and by ‘the men of the city’ or ‘the men of the country’ on the other. The labelling of the vessels, which presumably were filled with the supplies in demand, would have made it easy to check whether each side had fulfilled its duty.⁵⁸ Apart from such small vessels, there sometimes appear numerical or hieroglyphic signs on pithos rims. They probably gave information on the capacity and supposed contents of these storage containers.⁵⁹

IMPORTS

Imported pottery from outside the Hittite realm is in evidence only in restricted numbers at the Hittite centres excavated so far. The greatest part consists of a very distinctive kind of fabric, known as ‘Red Lustrous Wheel-Made Ware’

⁵⁷ Mellaart and Murray 1995, 1, 21, 100-08.

⁵⁸ A. Müller-Karpe 1998, 106-07; 2002, 261. For a different view, see Gates 2001.

⁵⁹ See, for example, the signs on pithoi from the magazines of Temple 1 at Boğazköy (Bittel 1937, 53-54 and Taf. 38; Neve 1969, 14-16 and Beilage 5).

(RLWm).⁶⁰ The characteristic feature of this fabric is a compact, bright orange body of well-levigated clay, which does not contain any visually recognisable temper. Vessels made from RLWm had a wide distribution in the eastern Mediterranean during the Late Bronze Age, occurring in Cilicia, Cyprus, Syria, the Levantine coast, down to Egypt and Nubia in the south.⁶¹ They appear in a variety of shapes, including bowls of several types, jugs and jars, lentoid flasks, libation arms and spindle bottles.⁶² The distinct appearance and the composition of the clay clearly point to a common, specific place of origin. Although the actual production centres have not been found yet, mineralogical studies narrowed the area of question down to the south Anatolian coast and northern Cyprus.⁶³ Central Anatolia was reached by only a fraction of the RLWm shape repertoire. With a few exceptions, it was limited to spindle bottles and libation arms as discussed above (Fig. 6.3-4). It has long been held that finds of RLWm do not appear in the Hittite lands before the 14th century, about a century later than in its remaining distribution area.⁶⁴ This view has now to be changed. New researches at Kuşaklı and Boğazköy conclusively show that the import of RLWm into Central Anatolia sets in at the same time as elsewhere, i.e. toward the beginning of the 15th century. *Bulk import* of this ware, however, seems indeed to be a feature of the 14th and 13th centuries. In fact, Boğazköy is the place with the highest number of finds from any single location.⁶⁵ The special distribution pattern of this ware still awaits a satisfying explanation. It seems to be clear, however, that it was imported for its own value and not or not only because of the vessels' possible contents.

Mycenaean painted pottery, another ceramic class with a wide distribution in the eastern Mediterranean during the Late Bronze Age, did not reach Central Anatolia but in exceedingly small numbers. For a long time a group of flasks and stirrup jars from Maşat Höyük far to the north was the most substantial indicator altogether of such imports.⁶⁶ There is a thin scatter of isolated finds

⁶⁰ In the older literature, we also find the designation 'Syrian Ware' or *Syrische Keramik* for this fabric type, a term coined by E. Gjerstad (1926, 200-09) at an early stage of research in this matter.

⁶¹ On Red Lustrous Wheel-Made Ware, see Eriksson 1993; Kozal 2003; Mielke forthcoming.

⁶² Eriksson 1993, 19-30.

⁶³ Knappet 2000; Knappet *et al.* 2005.

⁶⁴ For the 'classical' dating, see Eriksson 1993, 133-34. For a re-evaluation of the evidence, see Mielke 2007. The situation in the valley west of Sarıkale exposed by the new excavations at Boğazköy supports Mielke's views.

⁶⁵ This is especially true since the substantial augmentation of RLWm vessels at Boğazköy through recent excavations (see above n. 29).

⁶⁶ Özgüç 1978, 66, 127-28, pls. 83-84; Özgüç 1982, 102-03, pl. 47.5-6.

for the rest of the Hittite core area.⁶⁷ Imports from the island of Cyprus show a comparably weak distribution pattern.⁶⁸ Only south of the Taurus Mountains, in modern Cilicia, are finds of Mycenaean and Cypriot origin somewhat more frequent. As in the case of RLWm, all these imports date into the later part of the Hittite sequence. Seen as a whole, Hittite interest in Cypro-Aegean products seems to have been low. This situation is somewhat contradictory if seen together with the substantial import of RLWm, for which a Cypriot origin is at least probable.

The search for western Anatolian pottery imports (especially for such from the Trojan culture area) has remained negative so far.⁶⁹ An interesting question is whether the vessels with micaceous slips discussed above may represent imports from south-western Anatolia, a region that appears to have had stronger cultural ties with Central Anatolia than the Aegean coastlands.⁷⁰

A completely unresolved issue is the likely exchange of pottery inside the Hittite realm, as there is no possibility for the time being to distinguish Hittite pottery products originating from different places.

POTTERY DEVELOPMENT AND OPEN QUESTIONS

Any deductions about the development of Hittite pottery must naturally be based on secure dating. It is exactly in this respect that we see a paradigmatic shift in Hittite archaeology taking place at present⁷¹. Before the consequences of these changes do not become more visible, it would be rather premature to draw any but the broadest outlines of the resulting scheme. I wish to give here some very general remarks on four aspects only: The origin of the Hittite tradition, the changes observable through the sequence, its disappearance towards the end of the 2nd millennium and, lastly, its variation in space.

This is not the place to go into the old question on the origin of the Hittites and their possible migration into Anatolia. From the perspective of the study of material culture, it has to be stressed that there is not the slightest break in tradition between the Karum period (the so-called 'Middle Bronze Age') and

⁶⁷ For a recent summary of Aegean-related finds from Late Bronze Age Central Anatolia, see Genz 2004a.

⁶⁸ Kozal 2003, 69-70.

⁶⁹ See Seeher 2005.

⁷⁰ Gunter 2006, 355-57.

⁷¹ See Seeher 2001a; A. Müller-Karpe. 2003; Schoop 2003; Mielke *et al.* 2006.

the following Hittite era.⁷² Purely archaeologically speaking, they are one and the same thing. To a certain degree, this also applies to the still older final Early Bronze Age or 'Transitional period'. Most obvious is a change in the technological sphere. After *ca.* 1900 BC, more or less suddenly, the majority of vessels became manufactured on the fast rotating potter's wheel, causing a strong change in the appearance of pottery. But looking more closely at the vessel shapes and other characteristics of the inventory we still observe strong continuity. Thus, if there ever was a break in the cultural sequence of northern Central Anatolia it should have happened even earlier in the 3rd millennium. Our insight into these matters is hampered, however, by the fact that the transition between the quite misnamed 'Copper Age', i.e. the middle part of the Early Bronze Age, and the final Early Bronze Age has never been closely researched.⁷³ The beginning of the Early Bronze Age is completely unknown to us.⁷⁴

Returning to the transition of the final Early Bronze Age to the Karum period, it is rather evident that the presence of Syrian merchants in Central Anatolia played a certain part in triggering off the process of political integration and the associated changes in material culture in this area. This long-known situation by itself does not explain very much in terms of the causal and structural relationships underlying this development. Not only were the foundations of the emerging ceramic shape repertoire entirely native Anatolian, even the potter's wheel was not a new introduction as it was in restricted use before. Still, we see two related features here that represent a break with the preceding period and lead into the following Old Hittite period: first of all, the wholesale introduction of the wheel most probably reflects the transformation of pottery manufacture from household to specialist production; secondly, the fine ceramic artefacts that were produced show that they played an important role in the personal or public display of wealth and power, or both.

⁷² Also, note the methodological inconsistency inherent in these designations. 'Karum period' is a term originating from economic history, 'Middle' or 'Late Bronze Age' are derivations from the Three-Ages System and 'Hittite' is an ethno-linguistic designation. As we use these terms as labels only, this fact may be regarded as of secondary importance. It shows, however, that the subdivision of the cultural sequence was not the product of a coherent path of reasoning but a mixture of quite different historic aspects.

⁷³ This has certainly to do with the fact that the last 'Copper Age' assemblages were recovered in the 1960s. At that time, little attention was paid to the internal material variation of the different phases or periods and the occurrence of sharp breaks between them was seen as a quite natural phenomenon.

⁷⁴ The work of reference on the 3rd millennium, although somewhat outdated now, is still Orthmann 1963. But note that the assemblages of which his 'Early Bronze Age 1' consists have meanwhile been recognised as being much older in reality, stretching from the 6th to the 4th millennia BC (Thissen 1993; Özdoğan 1996; Schoop 2005).

This practice did not continue afterwards. One after the other, the elaborate shapes, the different kinds of decoration and most of the fine-ware types were abandoned during the middle and late periods. Thus, the artistic aspect of pottery manufacture does not correlate to the rise of Hittite political and economic power. There is not even a simple inverse relationship, as the ups and downs in Hittite political history during the middle and late periods, which definitely had economic repercussions on the urban population, are not reflected in pottery development. Pottery seems to have gradually lost its status as a prestige good to other artefact classes and to have turned into a mere object of utilitarian value. Interestingly enough, exactly when this development becomes most obvious, i.e. at the beginning of the late period, foreign pottery imports appear in greater numbers, most notably Red Lustrous Wheel-Made Ware.

A last set of changes seems to occur at the very end of the Hittite sequence. This period is still badly defined, so the following remarks have to be taken with some caution. This time, we see a decline not in the aesthetical but in the technological standard of the pottery repertoire. I already mentioned this in context with the appearance of the *Töpferofen* variety of the dominant drabware fabric type. At the same time, there is a further contraction of the shape repertoire. This may be a result of the quickly dissolving economic basis of the Hittite state that is reflected in other fields of the archaeological record as well. The following Early Iron Age means an almost complete break with the Hittite tradition in material, cultural and economic respects.⁷⁵ Only during a short initial phase, lasting not more than maybe a generation, are there some reminiscences of the preceding phase. These disappear together with the potter's wheel immediately afterwards. At least, the situation shows that this development is not the result of a simple population replacement. Rather, the traumatic events following the disintegration of the Hittite state seem to be responsible. A consequence of the breakdown of the economic and administrative structures was, as it seems, a sudden depopulation of northern Central Anatolia caused by migration, starvation and violence. The remaining strongly reduced communities returned to a lower level of political and economic integration. They had to find to a new identity, a process mirrored in material culture change and, thus, also in the pottery repertoire. This process may or may not have been augmented by newcomers, individuals or groups dislocated in the wake of system collapse.

This leads us to look upon Hittite pottery from another, spatial perspective: One of the more interesting if unresolved questions is the ceramic situation in

⁷⁵ On the Early Iron Age sequence at Boğazköy, see Genz (2000; 2004b), from which the following statements are derived.

the Hittite countryside. It has long been recognised that in the tradition of handmade Early Iron Age pottery there re-emerge certain features seemingly 'lost' since the end of the Early Bronze or the Middle Bronze Ages.⁷⁶ This means that there must have existed one or more lines of pottery development in northern Central Anatolia, based on Early Bronze Age traditions, which branched away during the Hittite 'interlude' of the 2nd millennium. Two main questions result from this situation: Where were these traditions situated? Why do we lack any information on them yet? The second question may be answered more easily: If we find handmade pottery of Early Bronze Age appearance on a survey, we are naturally inclined to date it into the 3rd rather than into the 2nd millennium. The first, on the other hand, may prove to be more complex. Do we have to look into the Anatolian periphery of direct Hittite control? A possible candidate would be the Pontic region where the Kaška settled, notorious raiders of Hittite territory, described in the sources as being a rather backward tribal society.⁷⁷ Otherwise, could it be that inside the Hittite realm the rural population used pottery being different from that made at the large centres?⁷⁸ Due to the deficiency in excavation, both possibilities lack empirical foundation. Yet, even on a hypothetical plane, both are not completely satisfying. A tribal social organisation would not necessarily have prevented northern Anatolians from using the potter's wheel. At least in the early period we do have quite ordinary pottery of the 'standard' type in evidence at the Black Sea littoral.⁷⁹ Lastly, if the Kaška were newcomers in the 14th century, why should they have continued local Early Bronze Age traditions?⁸⁰ As for an 'archaic' Hittite rural population, we should at least expect some import of their pottery

⁷⁶ For more detail on this question, see Genz 2005 (with earlier references).

⁷⁷ von Schuler 1965; Klinger 2002; Glatz and Matthews 2005.

⁷⁸ There are some indications from extant survey data that Hittite pottery from smaller settlements tends to appear (or to be?) more archaic (see Ökse 2000, 98, 106; Dönmez 2002). It is self-evident, however, that the question will not be resolved without excavation and external dating.

⁷⁹ So, for example, at İkiztepe (V. Müller-Karpe 2001b), Dündartepe and Tekkeköy (Kökten *et al.* 1945). See also Dönmez 2002, who argues on the basis of survey data for a gradual retreat of Central Anatolian influences from the Black Sea area during the 2nd millennium BC. According to him, the coastal area was void of wheel-made pottery by the end of the Karum period, while in its hinterland it continues into the Old Hittite period. Note that in his paper the term 'Middle Bronze Age' differs from common understanding as it encompasses in addition the 'Transitional period' (final Early Bronze Age) and the 'Old Hittite period' (early Late Bronze Age). In my opinion, it would make more sense to eliminate the Anatolian 'Middle Bronze Age' from terminology rather than to enlarge it.

⁸⁰ Additionally, we have good evidence from the textual sources of a constant, if somewhat problematic, intermingling of Kaška tribesmen with Hittites apart from mutual raiding (von Schuler 1965, 63-64, 73-74, 81-82). Interactions of this kind should lead – one would expect – to a certain degree of material acculturation of the economically weaker partner rather than suppress it. See von Schuler (1965, 29-33) and (Klinger 2002) for the ambiguities concerning the date of the first appearance of the Kaška in the Pontic Mountains.

products at the large centres where they would have shown up in the excavations long ago. Not a trace of such objects has come to light so far, however, be it at Boğazköy-Ḫattuša or at any of the other excavated places.⁸¹

This takes us to another set of questions. If rural communities used pottery of the standard type, what did the production process look like and what were the structures of distribution behind it? Did the centres distribute pottery into the countryside, where the local population would have had to buy it, presumably along with other (but which?) redistributed goods? Was it produced locally, yet dependent on some – formal or informal – guidelines on what it was supposed to look like? It has become almost a banality to stress the uniform character of Hittite pottery all over the core area of the empire, up into the Keban region in eastern Anatolia. This even led to the much-discussed hypothesis that the capital enforced this ceramic uniformity to ensure the internal coherence of the empire in its multiethnic composition.⁸² Still, this uniformity may be more apparent than it is real. Without solid relative regional sequences, we do not have the prerequisites to compare contemporaneous pottery of different origin, neither typologically nor by the application of techniques offered by the natural sciences.

CONCLUSION

To sum up, we saw that there is a strong line of continuity in Central Anatolian pottery development beginning sometime in the 3rd millennium BC and running through to the end of the Empire period. The overwhelming majority of ceramic vessels always belonged to the undecorated standard drab-ware fabric type. The largest part of the more distinct types, distinguished by elaborate shape, high quality slips or decoration, belongs to the beginning of the Hittite sequence. The tradition and the techniques of manufacture were inherited from the preceding Karum period. This repertoire accompanied the rise of the Hittite elite during the period of state formation. In the time following, production of

⁸¹ At Boğazköy, a very small number of extraordinarily coarse non-Hittite vessel remains have recently been discovered in Hittite levels dating into the first half of the 15th century. They have been fired without atmospheric control, some are evidently handmade. These fragments, including a beak-spouted jug, are typologically Anatolian but recall Early Bronze Age and Karum period traditions (where such coarse objects are absent, however). These new finds do not answer the questions posed here, as we lack comparable finds from other contexts in the capital, from other Hittite settlements, and from excavations elsewhere that could indicate their place of origin. Instead, they rather illustrate how little we know about the archaeological landscape of Late Bronze Age Anatolia.

⁸² Gates 2001.

these artful objects ceased. Pottery seems to have lost its social role and to have become a mere commodity. At the same time, the first ceramic imports from outside the Hittite world appear. The broad range of functional types and their differentiated distribution inside the settlements reflects the economic complexity daily life had assumed in Hittite urban centres. The sudden collapse of the Hittite state utterly destroyed the world of the Late Bronze Age. The subsequent reorganisation of life in Central Anatolia broke with the traditions that characterised the preceding period, including material aspects such as the process of pottery manufacture.

Many of these developments are visible only in broad outlines at present. The major task for the future, as far as it concerns Hittite pottery research, will be the establishment of multiple independent regional sequences, based on a purely archaeological methodology. This is the only way to arrive at deeper insights into the variation of material culture in time (which is the basis for all further interpretation). Insights into variation in space will give us new information on whether and how the different parts of the empire and its periphery arrived at and participated in a Hittite identity, as reflected in material culture. Insights into variation in function will teach us about the economic differentiation inside and between Hittite communities of different complexity. All these aspects have a bearing on those dark areas in our historical knowledge on which the written sources are sketchy or silent. We will arrive eventually at a better understanding of the internal functioning of the society that created one of the earliest territorial empires in the Old World and managed to survive five centuries of constant change.

BIBLIOGRAPHY

- Beran, T. 1965: 'Das Zeichen "Sonne" in der hethitischen Hieroglyphenschrift'. *Anadolu Araştırmaları* 2, 63-69.
- 1967: *Die hethitische Glyptik von Boğazköy 1: Teil. Die Siegel und Siegelabdrücke der vor- und althethitischen Perioden und die Siegel der hethitischen Großkönige (Boğazköy-Hattuša V)* (Berlin).
- Bittel, K. 1937: *Boğazköy. Die Kleinfunde der Grabungen 1906-1912 I: Funde hethitischer Zeit* (Leipzig).
- 1958: 'Archäologische Untersuchungen der Gräber von Osmankayası'. In Bittel, K., Herre, W., Otten, H., Röhrs, M. and Schaeuble, J., *Die hethitischen Grabfunde von Osmankayası (Boğazköy-Hattuša II)* (Berlin), 1-34.
- 1976: 'Tonschale mit Ritzzeichnung von Boğazköy'. *RA*, 9-14.
- Boehmer, R.M. 1983: *Die Reliefkeramik von Boğazköy. Grabungskampagnen 1906-1912, 1931-1939, 1952-1978 (Boğazköy-Hattuša XIII)* (Berlin).
- Dönmez, Ş. 2002: 'The 2nd Millennium BC Settlements in Samsun and Amasya Provinces, Central Black Sea Region, Turkey'. *AWE* 1.2, 243-93.

- Emre, K. 1978: *Yanarlar. Afyon yöresinde bir Hitit mezarlığı/A Hittite Cemetery Near Afyon (TTKY VI.22)* (Ankara).
- Eriksson, K.O. 1993: *Red Lustrous Wheel-Made Ware (SIMA 103)* (Jonsered).
- Fischer, F. 1963: *Die hethitische Keramik von Boğazköy* (Boğazköy-Ḫattuša IV) (Berlin).
- Frantz-Szabó, G. 1987: s.v. 'Libationsarm ("armförmiges Gerät") A. Philologisch'. *RLAss VII*, 12.
- Gates, M.-H. 2001: 'Potmarks at Kinet Höyük and the Hittite ceramic industry'. In Jean, É., Dinçol, A.M. and Durugönül, S. (eds.), *La Cilicie: espaces et pouvoirs locaux (2e millénaire av. J.-C. – 4e siècle ap. J.-C.)* (Actes de la table ronde internationale d'Istanbul, 2-5 novembre 1999) (Paris), 137-57.
- 2006: 'Dating the Hittite levels at Kinet Höyük: a revised chronology'. In Mielke *et al.* 2006, 293-309.
- Genz, H. 2000: 'Die Eisenzeit in Zentralanatolien im Lichte der keramischen Funde vom Büyükkaya in Boğazköy/Ḫattuša'. *TÜBA-AR 3*, 35-54.
- 2003: 'Früheisenzeitliche Keramik von Büyükkale in Boğazköy/Ḫattuša'. *IstMitt 53*, 113-29.
- 2004a: 'Eine mykenische Scherbe aus Boğazköy'. *AA*, 77-84.
- 2004b: *Büyükkaya I. Die Keramik der Eisenzeit. Funde aus den Grabungskampagnen 1993 bis 1998* (Boğazköy-Ḫattuša XXI) (Mainz).
- 2005: 'Thoughts on the Origin of the Iron Age Pottery Traditions in Central Anatolia'. In Çilingiroğlu, A. and Darbyshire, G. (eds.), *Anatolian Iron Ages 5* (Proceedings of the Fifth Anatolian Iron Ages Colloquium held at Van, 6-10 August 2001) (British Institute of Archaeology at Ankara Monograph 31) (London), 75-84.
- Gjerstad, E. 1926: *Studies on Prehistoric Cyprus* (Uppsala).
- Glatz, C. and Matthews, R. 2005: 'Anthropology of a frontier zone: Hittite-Kaska relations in Late Bronze Age North-Central Anatolia'. *BASOR 339*, 21-39.
- Gorny, R.L. 1996: 'Viniculture and ancient Anatolia'. In McGovern, P.E., Fleming, S.J. and Katz, S.H. (eds.), *The Origins and Ancient History of Wine* (Philadelphia), 133-74.
- Gunter, A.C. 2006: 'Issues in Hittite Ceramic Production: A View from the Western Frontier'. In Mielke *et al.* 2006, 349-63.
- Haas, V. 1994: *Geschichte der hethitischen Religion (HdO Abteilung 1.15)* (Leiden/New York/Cologne).
- Henrickson, R.C. 1995: 'Hittite pots and potters: The view from Late Bronze Age Gordion'. *Biblical Archaeologist 58*, 82-90.
- Hoffner, H.A. 1995: 'Oil in Hittite texts'. *Biblical Archaeologist 58*, 108-14.
- Joffe, A.H. 1998: 'Alcohol and social complexity in ancient Western Asia'. *Current Anthropology 39*, 297-322.
- Kepinski, C. 1987: s.v. 'Libationsarm B. Archäologisch'. *RLAss VII*, 12-14.
- Klinger, J. 2002: 'Die hethitisch-kaškäische Geschichte bis zum Beginn der Großreichszeit'. In de Martino, S. and Pecchioli Daddi, F. (eds.), *Anatolia Antica. Studi in memoria di Fiorella Imparati*, vol. 1 (Eothen 11) (Florence), 437-51.
- Knappett, C. 2000: 'The provenance of Red Lustrous Wheel-made Ware: Cyprus, Syria, or Anatolia?'. *Internet Archaeology 9* [http://intarch.ac.uk/journal/issue9/knappett_toc.html]

- Knappett, C., Kilikoglou, V. and Stern, B. 2005: 'The circulation and consumption of Red Lustrous Wheelmade ware: petrographic, chemical and residue analysis'. *AS* 55, 25-59.
- Kökten, K., Özgüç, N. and Özgüç, T. 1945: '1940 ve 1941 yılında Türk Tarih Kurumu adına yapılan Samsun bölgesi kazıları hakkında ilk kısa rapor'. *Belleten* 9, 361-400.
- Konyar, E. 2002: 'İmikuşağı 10. yapı katı (Eski Hitit dönemi) çanak çömlekleri'. *Anadolu Araştırmaları* 16, 381-424.
- 2006: 'Old Hittite presence in the east of the Euphrates in the light of the stratigraphical data from İmikuşağı (Elazığ)'. In Mielke *et al.* 2006, 333-48.
- Korbel, G. 1985: *Die spätbronzezeitliche Keramik von Norşuntepe* (Hanover).
- Koschel, K. 1996: 'Opium alkaloids in a Cypriote Base Ring I vessel (Bilbil) of the Middle Bronze Age from Egypt'. *Ägypten und Levante* 6, 160-66.
- Kozal, E. 2003: 'Analysis of the Distribution Patterns of Red Lustrous Wheel-Made Ware, Mycenaean and Cypriot Pottery in Anatolia in the 15th-13th centuries B.C.'. In Fischer, B., Genz, H., Jean, É. and Köroğlu, K. (eds.), *Identifying Changes: The Transition from Bronze to Iron Ages in Anatolia and its Neighbouring Regions* (Proceedings of the International Workshop, Istanbul, November 8-9, 2002) (Istanbul), 65-77.
- Mellaart, J. and Murray, A. 1995: *Beycesultan III, II. Late Bronze Age and Phrygian Pottery and Middle and Late Bronze Age Small Objects* (Ankara).
- Merrillees, R.S. 1989: 'Highs and lows in the Holy Land: Opium in biblical times'. *Eretz-Israel* 20, 148-54.
- Mielke, D.P. 2006a: *Die Keramik vom Westhang* (Kuşaklı-Sarissa 2) (Rahden, Westphalia).
- 2006b: 'İnandıktepe und Sarissa. Ein Beitrag zur Datierung althethitischer Fundkomplexe'. In Mielke *et al.* 2006, 251-76.
- 2007: 'Red Lustrous Wheelmade Ware from Hittite Contexts'. In Hein, I. (ed.), *The Lustrous Wares of Late Bronze Age Cyprus and the Eastern Mediterranean* (Papers of a Conference, Vienna, 5th-6th of November 2004) (Contributions to the Chronology of the Eastern Mediterranean 13) (Vienna), 155-68.
- Mielke, D.P., Schoop, U.-D. and Seher, J. (eds.) 2006: *Strukturierung und Datierung in der hethitischen Archäologie. Voraussetzungen – Probleme – Neue Ansätze/ Structuring and Dating in Hittite Archaeology. Requirements – Problems – New Approaches* (BYZAS 4) (Istanbul).
- Müller-Karpe, A. 1988: *Hethitische Töpferei der Oberstadt von Hattuša: ein Beitrag zur Kenntnis spät-großreichszeitlicher Keramik und Töpfereibetriebe unter Zugrundelegung der Grabungsergebnisse 1979-82 in Boğazköy* (Marburger Studien zur Vor- und Frühgeschichte 10) (Marburg).
- 1995: 'Untersuchungen in Kuşaklı 1992-94'. *MDOG* 127, 5-36.
- 1998: 'Untersuchungen in Kuşaklı 1997'. *MDOG* 130, 93-174.
- 2000: 'Untersuchungen in Kuşaklı 1999'. *MDOG* 132, 311-353.
- 2002: 'Die Keramik des mittleren und jüngeren hethitischen Reiches'. In *Die Hethiter und ihr Reich. Das Volk der 1000 Götter* (Bonn), 256-65.
- 2003: 'Remarks on Central Anatolian chronology of the Middle Hittite period'. In Bietak, M. and Hunger, H. (eds.), *The Synchronisation of Civilisations in the Eastern Mediterranean in the Second Millennium B.C., II* (Proceedings of the SCIEEM 2000 EuroConference, Haindorf, 2nd May-7th May 2001) (Contributions to the Chronology of the Eastern Mediterranean 4) (Vienna), 383-94.

- Müller-Karpe, V. 1998: 'Keramikfunde aus dem Gebäude C der Akropolis von Kuşaklı'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 1997'. *MDOG* 130, 112-19.
- 2000: 'Das Gefäßinventar im Nordflügel des Gebäudes C in Kuşaklı'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 1999'. *MDOG* 132, 328-33.
- 2001a: 'Weitere Beobachtungen zur 'Braustube' des Gebäudes C'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 2000'. *MDOG* 133, 234-37.
- 2001b: 'Zur frühhethitischen Kultur im Mündungsgebiet des Maraşsantija'. In Wilhelm, G. (ed.), *Akten des IV. Internationalen Kongresses für Hethitologie. Würzburg, 4.-8. Oktober 1999 (StBoT 45)* (Wiesbaden), 430-42.
- 2005: 'Bier und Bierproduktion in Anatolien zur Bronzezeit'. In Yalçın *et al.* 2005, 171-84.
- Neve, P. 1969: 'Der Große Tempel und die Magazine'. In Bittel, K., Güterbock, H.G., Hauptmann, H., Kühne, H., Neve, P. and Schirmer, W., *Boğazköy IV. Funde aus den Grabungen 1967 und 1968 1968* (Abhandlungen der Deutschen Orient-Gesellschaft 14) (Berlin), 9-19.
- 1971: *Regenkult-Anlagen in Boğazköy-Hattuša. Ein Deutungsversuch (IstMitt Beiheft 5)* (Tübingen).
- 1984: 'Ein althethitischer Sammelfund aus der Unterstadt'. In Bittel, K., Bachmann, H.-G., Naumann, R., Neumann, G., Neve, P., Orthmann, W. and Otten, H., *Boğazköy VI. Funde aus den Grabungen bis 1979* (Berlin), 63-89.
- Ökse, A.T. 2000: 'Neue hethitische Siedlungen zwischen Maşat Höyük und Kuşaklı'. *IstMitt* 50, 87-111.
- Orthmann, W. 1963: *Die Keramik der frühen Bronzezeit aus Inneranatolien* (Berlin).
- Özdoğan, M. 1996: 'Pre-Bronze Age sequence of Central Anatolia: an alternative approach'. In Magen, U. and Rashad, M. (eds.), *Vom Halys zum Euphrat. Thomas Beran zu Ehren* (Münster), 185-202.
- Özgüç, T. 1957: 'The Bitik vase'. *Anatolia* 2, 57-78.
- 1978: *Maşat Höyük kazıları ve çevresindeki araştırmaları/Excavations at Maşat Höyük and Investigations in its Vicinity (TTKY V.38)* (Ankara).
- 1982: *Maşat Höyük II. Boğazköy'ün kuzeydoğusunda bir Hitit merkezi/A Hittite Center Northeast of Boğazköy (TTKY V.38a)* (Ankara).
- 1986: 'The Hittite Cemetery at Ferzant: New observations on the finds'. *Belleten* 50, 393-402.
- 1988: *İnandiktepe. Eski Hitit çağında önemli bir kült merkezi/An Important Cult Center in the Old Hittite Period (TTKY V.43)* (Ankara).
- 2002: 'Die Keramik der althethitischen Zeit – Kultgefäße'. In *Die Hethiter und ihr Reich. Das Volk der 1000 Götter* (Bonn), 248-55.
- Parzinger, H. 1995: 'Bemalte Keramik aus Boğazköy-Hattuša und die frühe Eisenzeit im westlichen Ostanatolien'. In Finkbeiner, U., Dittmann, R. and Hauptmann, H. (eds.), *Beiträge zur Kulturgeschichte Vorderasiens. Festschrift für Rainer Michael Boehmer* (Mainz), 527-36.
- Parzinger, H. and Sanz, R. 1992: *Die Oberstadt von Hattuša. Hethitische Keramik aus dem zentralen Tempelviertel. Funde aus den Grabungen 1982-1987 (Boğazköy-Hattuša XV)* (Berlin).
- Pasternak, R. 2000: 'Archäobotanische Arbeiten 1999: Die Bearbeitung eines Massenfundes von Gersten im Nordflügel des Gebäudes C'. In Müller-Karpe, A., 'Untersuchungen in Kuşaklı 1999'. *MDOG* 132, 348-51.
- Rice, P.M. 1987: *Pottery Analysis: a Sourcebook* (Chicago).

- Sauter, F., Puchinger, L., Graf, A. and Thumm, D. 2001: 'Studies in organic archaeometry II. Analysis of the ancient content of a flask excavated in Troia'. *ARKIVOC* 3, 22-25.
[<http://www.arkat-usa.org/ark/journal/Volume2/Part3/Pihlaja/KP-146A/146A.htm>]
- Schirmer, W. 1969: *Die Bebauung am unteren Büyükkale-Nordwesthang in Boğazköy. Ergebnisse der Untersuchungen der Grabungscampagnen 1960-1963* (Boğazköy-Ḫattuša VI) (Berlin).
- Schoop, U.-D. 2003: 'Pottery traditions of the later Hittite empire: problems of definition'. In Fischer, B., Genz, H., Jean, É. and Köroğlu, K. (eds.), *Identifying Changes: The Transition from Bronze to Iron Ages in Anatolia and its Neighbouring Regions* (Proceedings of the International Workshop, Istanbul, November 8-9, 2002) (Istanbul), 167-78.
- 2005: *Das anatolische Chalkolithikum. Eine chronologische Untersuchung zur vor-bronzezeitlichen Kultursequenz im nördlichen Zentralanatolien und den angrenzenden Gebieten* (Remshalden).
- 2006: 'Dating the Hittites with Statistics: Ten Pottery Assemblages from Boğazköy-Ḫattuša'. In Mielke *et al.* 2006, 215-39.
- Seehr, J. 1995: 'Die Ausgrabungen in Boğazköy-Ḫattuša 1994'. *AA*, 597-625.
- 2000: 'Getreidelagerung in unterirdischen Großspeichern: zur Methode und ihrer Anwendung im 2. Jahrtausend v. Chr. am Beispiel der Befunde in Ḫattuša'. *SMEA* 42.2, 261-301.
- 2001a: 'Die Zerstörung der Stadt Ḫattuša'. In Wilhelm, G. (ed.), *Akten des IV. Internationalen Kongresses für Hethitologie. Würzburg, 4.-8. Oktober 1999* (StBoT 45) (Wiesbaden), 623-34.
- 2001b: 'Die Ausgrabungen in Boğazköy-Ḫattuša 2000'. *AA*, 333-62.
- 2002: 'Die Ausgrabungen in Boğazköy-Ḫattuša 2001'. *AA*, 59-78.
- 2005: 'Überlegungen zur Beziehung zwischen dem hethitischen Kernreich und der Westküste Anatoliens im 2. Jahrtausend v. Chr.'. In Horejs, B., Jung, R., Kaiser, E. und Teržan, B. (eds.), *Interpretationsraum Bronzezeit. Bernhard Hänsel von seinen Schülern gewidmet* (Bonn), 33-44.
- 2007: 'Eine Kultvase mit der Darstellung des Wettergottes von Halab aus Ḫattuša'. In Alparslan, M., Doğan-Alparslan, M. and Peker, H. (eds.), *Belkis Dinçol ve Ali Dinçol'a Armağan. VITA. Festschrift in Honor of Belkis Dinçol and Ali Dinçol* (Istanbul), 707-29.
- Seidl, U. 1972: *Gefäßmarken von Boğazköy* (Boğazköy-Ḫattuša VIII) (Berlin).
- 1975: 'Keramik aus Raum 4 des Hauses 4, westlich der Tempelterrasse'. In Bittel, K., Güterbock, H. G., Neumann, G., Neve, P., Otten, H. and Seidl, U., *Boğazköy V. Funde aus den Grabungen 1970 und 1971* (Berlin), 85-107.
- Sipahi, T. 2000: 'Eine althethitische Reliefvase vom Hüseyindede Tepesi'. *IstMitt* 50, 63-85.
- 2001: 'New evidence from Anatolia regarding Bull-Leaping Scenes in the Art of the Aegean and the Near East'. *Anatolica* 27, 107-25.
- Thissen, L. 1993: 'New insights in Balkan-Anatolian connections in the Late Chalcolithic: old evidence from the Turkish Black Sea littoral'. *AS* 43, 207-37.
- Ünal, A. 2005: 'Bier im Alltagsleben und im Kult der altanatolischen Völker'. In Yalçın *et al.* 2005, 167-70.
- Ünlü, E. 2005: 'Locally produced and painted Late Bronze to Iron Age Transitional Period pottery of Tarsus-Gözlükule'. In Özyar, A. (ed.), *Field Seasons 2001-2003 of the Tarsus-Gözlükule Interdisciplinary Research Project* (Istanbul), 145-68.

- von Cranach, D. 1982: 'Drogen im alten Ägypten'. In Völger, G. and von Welck, K. (eds.), *Rausch und Realität. Drogen im Kulturvergleich* (Reinbeck), 480-87.
- von Schuler, E. 1965: *Die Kaskäer. Ein Beitrag zur Ethnographie des alten Kleinasien* (Berlin).
- Weisgerber, G. 2005: 'Biertrinker an Bord? Ein seltener Fund aus Blei!'. In Yalçın *et al.* 2005, 157-65.
- Winter, A. 1972: 'Aufwülsten und Brennen eines Riesenpithos'. *AA*, 541-52.
- Yalçın, Ü., Pulak, C. and Slotta, R. (eds.) 2005: *Das Schiff von Uluburun. Welthandel vor 3000 Jahren* (Exhibition catalogue) (Bochum)
- Zias, J. 1995: 'Cannabis sativa (hashish) as an effective medication in antiquity: the anthropological evidence'. In Campbell, S. and Green, A. (eds.), *The Archaeology of Death in the Ancient Near East* (Oxford), 232-34.
- Zimansky, P. 2005: 'Archaeology and texts in the Ancient Near East'. In Bernbeck, R. and Pollock, S. (eds.), *Archaeologies of the Middle East: Critical Perspectives* (Malden), 308-26.

METALS AND METALLURGY IN HITTITE ANATOLIA

Jana SIEGELOVÁ and Hidetoshi TSUMOTO

Abstract

The present chapter attempts to give an overview of Hittite metallurgy from a philological as well as from an archaeological point of view. While both disciplines provide interesting information, it still is difficult to gain a coherent picture of Hittite metallurgy, as the two types of evidence elucidate totally different aspects and only sometimes complement each other. Some differences exist between the two images of Hittite metals and metallurgy, based on these independent studies, especially on the quantity of metals in circulation and the pioneering use of iron.

Metals and metallurgy had a high socio-economic and cultural importance in Hittite culture. Studies of Hittite written documents from temples or palaces have amply demonstrated the importance of metals for the Hittite economy, through texts on the circulation of metals or the organisation of craftsmen. On the other hand, archaeological studies of actual finds have concentrated on the archaeometallurgical, technological and cultural-historical aspects and illustrate mainly the daily use of metal. The following article is an attempt to give an overview of the use of metals in the Hittite world on the basis of various disciplines such as philology, archaeology and archaeometallurgy.

A. METAL IN THE LIGHT OF HITTITE TEXTS (Jana Siegelová)

The oldest written records indicating the use of metals in Anatolia are accounting documents and letters of Old Assyrian merchants, who over several generations at the beginning of the 2nd millennium BC maintained an active trade between Aššur and Anatolia. They carried tin and textiles from the metropolis and bought copper in Anatolia, and possibly also traded with textiles there. A much wanted article was iron. In the documents silver is also attested, used primarily as a medium of payment. Gold also played an important role, even if it otherwise served as a capital deposit in the Assyrian

commercial settlements. Only a small proportion of the extensive written records of the Assyrian *emporía* has so far been published; nonetheless it becomes sufficiently clear that the Assyrians concentrated on trade, while the production and processing of metals were in the hands of native craftsmen.

The rulers of the Old Hittite kingdom, which united the independent city states in Central Anatolia until the middle of the 17th century BC, thus inherited a relatively developed metallurgy. In contrast to the period of the Old Assyrian commercial settlements, among Hittite written records (from the 17th to the beginning of the 12th century BC) no commercial documents are preserved – they seem to have been recorded on perishable wooden tablets, thus the information on metallurgy and the metal trade is more limited. Clay tablets, written in Hittite cuneiform script, predominantly focused on cultic affairs and administrative practices. Information about metalworking is meagre and must be gleaned from the scattered and incidental references in descriptions of celebrations, ritual regulations, vows and documents for magic actions or royal regulations. The rare administrative records, such as tax lists, stocktaking minutes or inventory lists contain valuable information on metal objects.

In the course of the five centuries of Hittite history, metallurgy underwent certain technological developments (according to the written sources which we outline in this short overview).

The oldest written records already mention gold, silver, iron, copper, tin and bronze. Black iron, often interpreted as meteoric iron, and lead are attested only from the 15th century onwards. However, as iron as well as lead finds are already attested from Early Bronze Age contexts, their late appearance in Hittite texts seems rather to be accidental.

The metals mentioned were listed together with stones and they were probably regarded by Hittite scribes as such. These were the primary elements of which the universe was composed.¹ Naturally the material value of the metals and their ability to be stored was also estimated. ‘Silver and gold’ was the synonym for wealth. Gold alone was considered to be durable, pure and firm. Silver was considered as symbol of purity and it seems that its bactericidal effects had been recognised. Lead was also used as cure. Iron was considered as a symbol of stability and a term for strength.²

Such is the nature of the preserved texts that the most commonly mentioned metals are gold and silver, specified as either war booty or tribute: gold from

¹ Lists of goods for ritual or magic ceremonies contain – in varying order – ‘silver, gold, lapis lazuli, carnelian, Babylon stone, rock crystal, marcasite, iron, copper, bronze, tin, lead’; often also only ‘silver, gold, all precious stones’. See Siegelová 1984, 91-100.

² Siegelová 1993, 112-13.

Amurru, Ugarit and Alašiya; silver from Ugarit.³ Of course the locations mentioned do not necessarily correspond to the actual sources of the raw material. Silver (in the form of ingots)⁴ and sometimes gold⁵ were also levied as tax. Four different qualities of gold were distinguished: a standard product (the metal name without any specification), 'excellent' quality (GUŠKIN SIG₃) and two different alloys with copper (GUŠKIN QADU URUDU and GUŠKIN SIG₃ QADU URUDU). Likewise for silver a standard product, an 'excellent' quality and a further quality KU₃.BABBAR *mi(n)tešnaš* were known for the raw material as well as for finished products. The precious metals were controlled by the administration offices and hoarded as an accumulation of capital, but were also spent: for temples (regular maintenance or for votives),⁶ for furnishing palaces (insignia, emblems, prestige weapons and jewellery),⁷ or

³ War booty: silver, gold, KUB 24.3 + II 47; gold, copper from Alašiya, KBo 12.38 I 5'; silver, gold, tin and copper probably too in KUB 36.98 b rev. 14'. Tribute: gold from Amurru, KBo 10.12 I 9'; KBo 5.9 I 30; gold and silver from Ugarit, RS 17. 227, 20-21; silver, gold, copper from Ugarit, RS 17. 340, 23; gold and copper from Alašiya, KBo 12.38 I 13', 15'. See Siegelová 1993, 113.

⁴ KBo 18.155; KBo 18.156. See Siegelová 1986, 188, 192.

⁵ KBo 18.153 (+) 153 a obv. 2', 3'. See Siegelová 1986, 100. For 20 bars of gold in a magazine, see also Columbia University Library (HFAC 8) + KUB 42.81 r. col. 1'.

⁶ Regular maintenance for temples: KBo 20.75 rev. 6, KUB 56.24 I 9'-10', 14', IV 4, 9-10, KUB 40.2 rev. 19-24. Deliveries for cultic ceremonies – cult statues: KUB 7.49, 9', KUB 56.3, 6'; cult symbols: KUB 42.78 II *passim*; equipment for cultic ceremonies, rituals or magic procedures – rhyta or other vessels: KBo 17.75 IV 8'-9', KBo 17.88 + II 1, KUB 1.17 I 5, KUB 20.81 II 11', KBo 4.13 V 11; drinking straws: KBo 26 + I 4', KBo 16.80 obv. (?) 3'; *peran pedumaš* '(object) to-bring-in-front-of' (according to D.P. Mielke this can hardly be a libation arm, as is considered in Siegelová 1998, 65 n. 3. Perhaps it is some kind of cutlery[?]): KUB 42.69 II(?) 18', KUB 42.46, 1', KUB 42.64 rev. 16'; measuring vessels: KBo 11.44 rev. 11'; washing bowl: KUB 10.21 II 32, KBo 30.56 IV 25, KUB 2.15 I 11'; table: IBoT 2.98 V 2', 4'. 100 Shekels of silver for the celebration of the AN.TAḪ.ŠUM Festival in Arinna, provided by his majesty, KBo 9.91 rev. 9'-10'. Votives – statues or busts of gods: KUB 15.1 I 7, III 36', KUB 48.123 I 18', of the king: KUB 15.17 + I 8, KUB 31.53 obv. 2; cult symbols: KUB 15.17 + I 6-7, KUB 31.53 obv. 2 – 3, KUB 15.5 IV 5; rhyta and other vessels: KUB 15.17 + I 7, KUB 31.53 obv. 1, KUB 31.54 IV 16'; flasks for perfumes or ointments: KUB 15.3 I 20, KUB 15.11 III 16; amounts of silver: KUB 15.5 II 23', IV 15', 36', 37'; bars of gold: KUB 15.5 IV 14'.

⁷ Palace equipment – insignia: lituus with silver inlays, Bo 3769 lk. col. 6'; lituus of gold, KUB 10.21 I 3; emblems: KUB 42.84 obv. 5; seal of gold, KUB 13.34 + I 28. Prestige weapons – scabbard (plated with gold): KUB 12.1 III 7', KBo 18.178 obv. 2'; spears: KBo 10.28 V 6, KBo 11.73 rev. 21', IBoT 3.59, 6'; silver helmets: KUB 26.66 III 6. Jewellery – golden diadems and wreaths: KUB 22.70 obv. 12, 17, 19, 71, KUB 15.23 obv. 14, KUB 42.38, 22'; hairpins: KUB 42.75 obv. 8, IBoT 1.31 rev. 1; earrings: KUB 42.38, 15', 16', KBo 30.77 obv. 4'; earrings with pendants: KUB 42.69 II(?) 16'; collars: KUB 58.59 I(?) 9', KUB 42.43 obv. 7'; torques: KBo 18.161 obv. 8', KUB 42.64 rev. 4'; necklace: KBo 9.92, 2', 3', 4', KUB 42.64 rev. 8', KUB 42.78 II 23', KUB 42.69 II(?) 6'; KUB 12.1 IV 18'; pendants: KUB 12.1 III 15'; elements of necklaces: KUB 12.1 IV 4', 18'; beads: KUB 42.64 rev. 4', KUB 42.69 II(?) 15'; collar: KUB 12.1 III 14'; pins: KUB 42. 78 II 6', KUB 42. 84 obv. 6; brooches: KUB 42. 43 obv. 4'; pectoral: KUB 15.1 I 10; rings: KUB 42.64 rev. 12'; armrings: KUB 42.38 obv. 11', KUB 42.38 8'

as remuneration or reward (all metals, but predominantly silver). These rewards mostly took the form of finished objects (belts of bronze or gold, silver or gold jewellery, daggers with gold inlays, knives or textiles). Silver, on the other hand, was referred to mainly by weight, thus it may have been a kind of currency, but a standardised form has not yet been detected. Precious metals were used likewise as material for the most important written documents such as international treaties.⁸

The most common raw material for many centuries was copper.⁹ It came as booty or tribute from Ugarit and Alašiya.¹⁰ Hittite economic texts also point to origins in Kizzuwatna and in further regions in Anatolia not yet securely located, levied as taxes.¹¹ Considerable quantities are mentioned, always indicated in *mina* values, which were delivered in the form of artefacts such as axes, hatchets, sickles, arrowheads, different types of knives or daggers, vessels or household utensils. The first three types (i.e. axes, hatchets, sickles) were standardised on a weight of 2 *minas* (about 1 kg) and thus represented a standardised currency. In addition to copper, taxes were delivered in tin, silver (in the form of ingots) or iron (blades, clubs, ingots or simply indicated by weight), but to a more modest extent. Tin was always noted by weight and obviously

made of twisted gold. Similar silver jewellery is mentioned, but in lesser quantities. Stylus of silver: KUB 17.20 II 25; vessels: IBoT 1.31 rev. 2, KBo I 3 obv. 33, beakers of silver: KUB 31.76 obv. 7', rhyta of silver: KUB 31.76 rev. 14', 18'; perfume flasks: KUB 12.1 IV 28'; spoon: KUB 12.1 IV 28'; holder (?): KBo 11.25 V(?) 10', KBo 18.176 I 7'; spindle: KUB 12.1 IV 33'; nails: KUB 42.57, 3'; table: KUB 42.69 III(?) 8'; chair: KUB 42.69 III(?) 9'; footstool (with gold plating): KUB 42.21 obv. 9; stands: KUB 42.81 +, 2'; feet of a bed: KBo 18.175 (+) V 14; chariot, decorated with gold: KBo 11.43 I 21, KBo I 3 obv. 32. Bars of gold stolen from palace: KUB 31.76 I 11'. Gold for embroideries: KUB 42.64 rev. 15', KUB 34.45 + obv. 10' (shirts), KUB 12.1 III 26' (sash), 27' (tapestries); silver for embroideries KUB 42.11 II 7 (dress); decorations for dresses: KUB 12.1 III 19', KBo 10.23 (+) I 15'; for sashes: KUB 12.1 III 26' or belts: KUB 12.1 III 32', KUB 42.59 obv. *passim*; for shoes: KUB 42.64 rev. 13' (two pairs decorated with gold, one pair decorated with silver), KUB 12.1 IV 34', KUB 13.34 + 40.84 I 10 (golden shoes of the queen); head-wear decorated with gold: KUB 12.1 IV 44'; (saddle-)cloth decorated with gold: KUB 12.1 III 4'.

⁸ Gold tablet: treaty with Karkamiš between Šuppiluliuma I and Šarri-Kušun, KUB 19.27 left edge 6; silver tablet: treaty between Hattušili III and Ramesses II, KBo 1.7 obv. 14. See Siegelová 1993, 117.

⁹ Siegelová 1994, 119-21 with references from Hittite cuneiform texts.

¹⁰ Cf. n. 3.

¹¹ Tax-payers located in Asia Minor: Hen[-, -]hira, Arpuziia, Šawatta, Kurkuriša, KUB 42.29 II 4', 12', 15'-16' V 18'; Kuenma/zuliia, Mizamizana, Huwar[-, Šar[-, Tuššimna, Šapla, KUB 42.28 + III 4', 8', IV 6', 7', 14', 19'; Zišk[uliiia(?), Bo 6419, 5'; Awan[a-, KBo 18.164, right col. 5'; Tetum[-, Kapittat[-, KUB 26.67, right col. 3', 13'; Munna[-, Šahhu[-, KBo 18.162 I 6', 13'; Ar[x]huz[i-, Luli[- KBo 7.24 II 14', IV 1'; Ank[uwa(?), Anzilatašši, Parnašši, Zazar[a-, KBo 18.161 rev. 8, 13, 16. Tax-payers located in Kizzuwatna: KUB 42.28 + IV 17', KUB 26.67, right col. 6'. The highest amount delivered by a tax collection office is 496 *minas*; the highest amount paid by one tax-payer amounts to 200 *minas*. See Siegelová 1986, 141-85.

more strictly controlled. The largest testified quantity is 1 (or 2) talents (roughly 30 kg). No specific relationship of the proportions of copper and tin within respective deliveries can be observed. Where they were supplied together and both entries are preserved, the proportions varied significantly: 1: 14.5, 1: 10.33, 1: 8.4 and 1: 8. The tin came from specific locations, of which alas Kizzuwatna alone can be securely located.¹² The administration offices and depots to which the deliveries were sent, stored and regularly controlled the material, but they must also have further processed the raw materials. This would explain why copper, which never appears to have been delivered in the shape of ingots, nevertheless existed as ingots in the depots. Bronze, which is mentioned as one of the materials held in the depots, might have been produced there, although copper and tin were always delivered separately.

Considerable quantities of copper were handed out from the depots to craftsmen, who converted it to adzes, saws, pliers, grip arms, heels, spades, sickles, and also to spears or parts of horse-bits. In Middle Hittite times door bolts, forks, needles and different vessels are mentioned as well. In the manufacture of jewellery copper was used but rarely, for instance for hair clips. In cultic contexts copper was used particularly for the manufacture of paraphernalia or vessels. Copper statues or cultic symbols were more rarely mentioned; if they occur, they are often covered with gold. Finally, copper was used, together with lead, as raw material for glass production.

Bronze¹³ occurs in Hittite texts more rarely than copper and also originated – according to a temple building ritual – from Alašiya. Reliable data concerning its provenance and manufacture are completely absent; according to tax and expenditure lists, it seems that bronze was cast in workshops controlled by the central administration. As to the composition of the alloys, however, nothing more is known than the relation between copper and tin in the deliveries mentioned above. Bronze was apparently considered a high quality material for specific requirements. It was used for the production of lance-heads of the guard, whereas arrowheads were always fabricated of copper. Occasionally, elaborate libation vessels were made of bronze; normally they were of precious metal. Bronze was also used to produce lamps and medical instruments. Bronze tools, such as axes, sickles, knives, daggers and needles (these last usually made of copper), seem to have had a symbolic value rather than a practical purpose. Occasionally, statues and other cultic paraphernalia were made of

¹² The locations mentioned are: Awan[a-, KBo 18.164, right col. 5'; Tetum[-, Kapittat[-, KUB 26.67, right col. 3', 13'; Munna[-, Šahhu[-, KBo 18.162 I 6', 13'; Ar[x]huz[i-, Luli[- KBo 7.24 II 14', IV 1'; Kizzuwatna, KUB 26.67 right col. 6'. See Siegelová 1986, 162-66.

¹³ Siegelová 1994, 121-22 with references.

bronze, while during the 13th century iron statues seem to become more popular. In comparison with silver and gold, bronze played a subordinated role: it was seldom used for jewellery or ornaments; only belts and buckles, which were given in larger numbers to reward functionaries, generally consisted of bronze.

Hittite metallurgy has always captured the imagination of researchers due to the early attested use of iron.¹⁴ Iron is mentioned in limited quantities already in Cappadocian documents. In Hittite sources of the 17th-16th centuries (Old Hittite period) iron still appears as an extraordinary material, restricted to the production of royal insignia and weapons such as lances and sceptres, which were at the same time used in ritual and magical contexts. In texts of the Middle Hittite period (15th-beginning of the 14th century BC), the repertoire of iron objects grew and now included ceremonial objects such as various axes and the *lituus* as well as jewellery, which was distributed to cult functionaries. Under the Hittite empire (14th-13th centuries BC), the attestations for iron objects rise considerably. Again, the repertoire broadens: in addition to royal insignia, it was used for cultic objects, such as idols in anthropomorphic or zoomorphic shape, which testifies to the high appreciation of iron. Simultaneously, however, larger numbers of knives, daggers, and/or swords or spearheads appear in Hittite texts of this time. On the other hand, iron jewellery becomes rarer. That iron was more widely used during the Empire period is also corroborated by the fact that communities delivered their taxes in iron and that it was now weighed in *minas*.

The 'black iron', which was thought to come from the sky, and thus was interpreted as meteoric iron, is attested more rarely. It was used for the same objects as ordinary iron, however, and there is no evidence of its being reserved for special purposes.

On the basis of tax lists and other Hittite economic records, A. Müller-Karpe¹⁵ computed the relative frequency of particular metals and was able thereby to gain insights into the circulation of the metals in the Hittite empire in 13th century. According to him, approximately 25% of taxes were paid with raw metals, of which about 60% was copper, 8% tin and 13% silver; whereas there was just one attestation each for gold and iron (Fig. 1.1). On the other hand, in the inventory lists, which reflect the contents of the stores of the administrative centres and temples, only 6% of the metals mentioned in the documents is found in the form of unprocessed metals (predominantly silver)

¹⁴ Siegelová 1984 with references; Košak 1986.

¹⁵ A. Müller-Karpe 1994, 74-78.

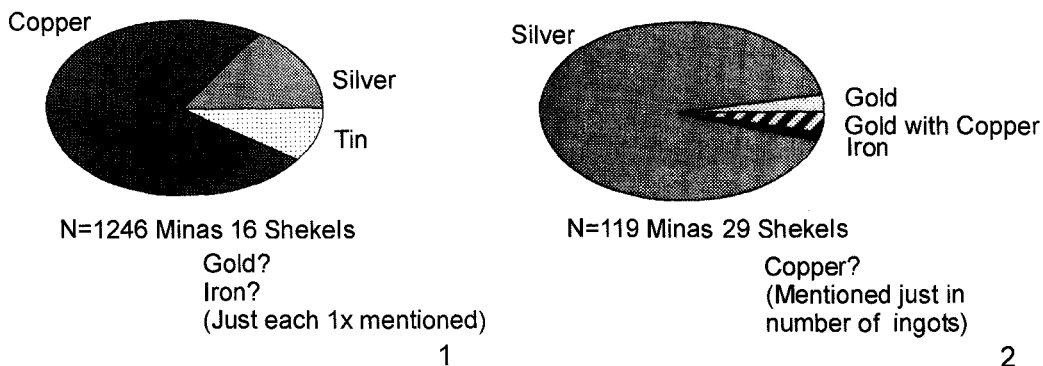


Fig. 1. Quantitative ratios of various kinds of raw metal according to A. Müller-Karpe:
 (1) in Hittite tax lists; (2) in Hittite inventory lists of palaces and temples
 (after A. Müller-Karpe 1994, Abb. 50a-b).

(Fig. 1.2). According to A. Müller-Karpe, this difference testifies to the importance of the state sector in metalworking.¹⁶ Accordingly, finished metal products formed only 13% of the tax deliveries, whereas in the inventory texts the percentage of finished metal products rises to 40%. As A. Müller-Karpe himself notes,¹⁷ he counted axes and sickles as finished products in making his calculations, although these might have been a kind of standardised currency rather than actual tools. It is significant that in the tax lists precious metals in the form of finished products are missing; this seems to provide evidence that these raw materials were only processed in state workshops.¹⁸

The processing of the metals lay in the hand of smiths (^{LÚ}SIMUG). In connection with metalworking, ^{LÚ}TIBIRA is mentioned as well. Except for these general designations, specialised branches of these occupations, whose members already appear as corporate groups during ceremonies, are documented from the Middle Hittite period onwards. Thus we know of gold-, silver-, iron- and coppersmiths, whereas for lead, tin or bronze no special job designations have been attested so far. The gold- and silversmiths can also be subsumed under the term ^{LÚ}KU₃.DÍM, which should be translated as 'jeweller'. This occupation coincided repeatedly with the function of a treasurer or administrator, who belonged to most influential officials of the state administration.¹⁹

¹⁶ A. Müller-Karpe 1994, 76.

¹⁷ A. Müller-Karpe 1994, 77.

¹⁸ A. Müller-Karpe 1994, 78.

¹⁹ Siegelová 1986, 118-21.

In contrast, the metalworker, ^{LÚ}TIBIRA, who may have worked with copper judging from the ideogram, was obliged to participate in *corvée* labour such as the building of roads and of fortresses according to Hittite laws.²⁰ A trained smith (^{LÚ}SIMUG) might even be found among the serfs, and he could be bought like a potter, carpenter, leatherworker or weaver for 10 Shekels (*ca.* 120 g) of silver.²¹

Hittite scribes paid little attention to the metallurgical procedures itself. From isolated notes it can be concluded that the raw material was first sorted. Melting was described with the verb *zanu-* (to cook); for gold *lapanu-* ('to make glow') was used as well. The application of purification processes might be inferred from the fact that different qualities of metals are mentioned. The skill of alloying is attested by texts describing the production of gold – copper alloys and, of course, bronze. The metal was cast (*lahuwai-*) into ingots or finished products. From an ingot or talent the necessary quantity was broken off (*arha duwarnai-*), in order to recast (*appa lahuwai-*) it into final products. In the case of iron, according to the terms used, three production stages can be observed: 'the iron directly (taken) from the furnace' (AN.BAR ŠA KI.NE), the standard product 'iron' (AN.BAR), and the higher quality, probably more highly valued 'excellent/first-class iron' (AN.BAR SIG₃).²² The final product might have been iron ingots, bars or blades. State-owned iron smithies are attested by the famous letter KBo 1.14 of Hattušili III to an Assyrian king.²³ On the other hand, 56 iron blades and 16 clubs of black iron mentioned in a tax list²⁴ show that iron was also produced by provincial communities.

Some objects made of less precious metals were improved by covering with silver, gold or tin. The exact techniques – plating or fire-gilding²⁵ – cannot be specified as the process is only described with the term GAR.RA, *halissiia-*. According to the finds the jewellers mastered several difficult techniques, but in the Hittite language only 'engraving' (*guls-*) can be translated with any degree of security. Torsion or filigree work might be designated as *tarupp-*

²⁰ Hittite laws §56: 'None of the coppersmiths is exempt from "making" ice, a fortification, and royal roads, or from harvesting vineyards. The gardeners render the *luzzi*-services in all the same (kind of work)' (Hoffner 1997, 68).

²¹ Hittite laws §176 b: 'If anyone buys a trained artisan – either a potter, a smith, a carpenter, a leather-worker, a fuller, a weaver, or a maker of leggings, he shall pay 10 shekels of silver' (Hoffner 1997, 140-41).

²² KUB 42.21 obv. 6; see Siegelová 1986, 137-39.

²³ Siegelová 1984, 155-56.

²⁴ KBo 18.158, 3' and 5'; see Siegelová 1986, 194.

²⁵ It has to be pointed out, however, that fire-gilding in the ancient Near East is hitherto only attested from the Sasanid period, i.e. from the 3rd century AD onwards (see Anheuser 1999, 15).

'twisting (with wire)'. Important parts of artefacts were often accentuated by being made of precious metal. For artefacts composed of several parts and materials different techniques of combining were known, such as riveting, soldering or mounting.²⁶

B. HITTITE METALLURGY FROM AN ARCHAEOLOGICAL POINT OF VIEW (Hidetoshi Tsumoto)

As we have seen above, documentary evidence provides a number of insights into topics such as metallurgical procedures, the organisation of craftsmen and the circulation of metals. However, it refers to just a part of Hittite metallurgical activities, mainly those concerning official institutions. Archaeological finds can elucidate further aspects of Hittite metallurgy that are not represented in the texts.

Compared with other categories of artefact, metal objects are less frequently encountered. Archaeological finds can be assigned to three different basic categories: settlement finds, grave finds and hoards. While in graves and hoards objects have been deposited intentionally, finds in settlements represent unintentional deposits: the finds preserved are things that were lost, overlooked or could not be retrieved for other reasons. As metals were always a relatively precious commodity, it is rare for metal objects simply to be lost; if this happened, mainly small objects or scrap metal are concerned. Only in a few cases of destruction through warfare or natural catastrophe are complete inventories of metal objects found *in situ*, for example at Kaman Kalehöyük in the later Karum period²⁷ or in Ortaköy-Şapinuwa from the Hittite period.²⁸ The normal fate of a metal object, however, was the crucible to be recycled.

Tombs often contain metal objects as funeral gifts. Compared with the rich assemblages of metal objects from Mycenae or Egypt, Central Anatolia provides little evidence for tombs with metal assemblages, mainly because no Hittite royal graves have been discovered so far. Textual evidence informs us that objects of precious metal were part of the funeral gifts.²⁹ The few Hittite graves excavated so far seem to be those of members of the lower class, and only rarely contain metal objects,³⁰ just as few hoards that contain metal objects

²⁶ KUB 42.38 obv. 17'-18': two pairs of silver earrings, one pair mounted with tin, the other with lead; see Siegelová 1986, 498-99.

²⁷ Omura 1994.

²⁸ Süel 1998.

²⁹ Otten 1959.

³⁰ For a summary of Hittite burials, see Emre 1991.

are known from the Hittite world. So far only Kastamonu,³¹ Şarkışla³² and Bolu³³ may be named.

Although it is not explicitly mentioned in Hittite written records, we can assume that most metal artefacts were recycled, that is collected and re-melted. The hoard from Tell Sifr in Iraq, which includes axes, adzes, sickle-blades, spades and copper scraps wrapped in palm mats, very probably represents metal collected for re-melting.³⁴ Furthermore, contemporary Old Babylonian written evidence shows the administrative collection of agricultural metal implements from peasants after the season's use, for checking and, if necessary, reworking the implements.³⁵ Metal was never wasted, especially precious metal such as gold and silver. The relatively low frequency of appearance of precious metal in archaeological contexts is explained by such conditions of circulation.

Regrettably, there are no finds which show real evidence of metal circulation in Hittite Anatolia. The metal hoard with 77 bronze objects – partly unfinished swords, and standardised flat and shaft hole axes – found at 'the house of the great priest' of Ras Šamra-Ugarit in northern Syria,³⁶ contemporary to the late Hittite Imperial period, might show us the metal circulation combined with temple- and palace economies which are also known from Hittite written sources.

METAL PRODUCTION

SOURCES OF METAL

The Pontic and Taurus Mountains, which surround the Central Anatolian plateau, offer rich mineral resources, such as copper, iron and silver (Fig. 2). Gold is found in western Anatolia. Naturally, the Hittites tried to bring these mineral-rich areas under their control to exploit these resources. As a result, complex relationships developed between the Hittite empire and these regions, which included the Kaška lands in the north, Kizzuwatna in the south and Arzawa in the west. Unfortunately, no actual evidence for Hittite mining and smelting activities has been discovered so far. However, analysis of lead isotopes shows that some metal finds from Anatolia and northern Syria indeed

³¹ Emre and Çınaroğlu 1993.

³² Bittel 1975; H. Müller-Karpe 1980, 767, no. 87, Taf. 159, C.

³³ Yıldırım 2001.

³⁴ Moorey 1971.

³⁵ Postgate 1992, 226-29.

³⁶ Schaeffer 1956, 251-52.

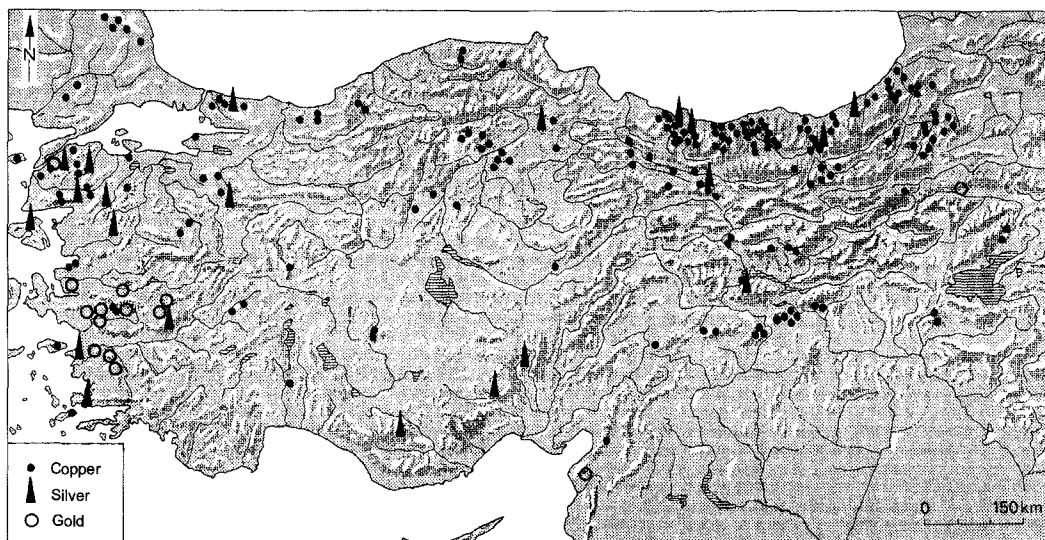


Fig. 2. Distribution of metal ores in Anatolia (after A. Müller-Karpe 1994, Abb. 1).

originated from ores in the Taurus Mountains.³⁷ Also metal of non-Anatolian origin was used by the Hittites, as indicated by the find of an ox-hide ingot, possibly originating from Cyprus, in Boğazköy.³⁸ This find indicates that the Hittite empire was involved in the (metal-)trade network of the eastern Mediterranean in the Late Bronze Age, which is well illustrated by the spectacular finds from the excavations of shipwrecks at Ulu Burun and Cape Gelidonya.³⁹ Copper from the rich mines on Cyprus surely was imported and used by Hittite smiths besides local Anatolian copper.

Tin is an indispensable commodity for alloying with copper to produce bronze. The existence of tin deposits in Anatolia is highly controversial.⁴⁰ Recently, A. Yener suggested the Kestel mine in the Taurus Mountains as a source of tin in the Early Bronze Age.⁴¹ However, there is absolutely no evidence for tin mining in the Middle and Late Bronze Age. Judging from the written records from Kültepe-Kaneš, it is clear that in the early 2nd millennium BC tin reached Anatolia from outside via Aššur. The Late Bronze Age

³⁷ Yener 2002, 39-40.

³⁸ A. Müller-Karpe 2000, 116 and Abb. 5.2.

³⁹ See Pulak 2002; Yalçın *et al.* 2005.

⁴⁰ Weisgerber and Cierny 2002, 179-80.

⁴¹ Yener 2000.

shipwreck at Ulu Burun yielded approximately one ton of tin ingots and shows the amount of tin that circulated in long-distance trade in the eastern Mediterranean.⁴² Tin ore deposits in Afghanistan and Central Asia are up to now the most likely sources of tin for the Near East in the Bronze Age.⁴³ Without doubt the origin of the tin used in the Bronze Age of the Near East will continue to be controversially discussed.

As only a few metal objects have actually been analysed for their exact composition, it has to be borne in mind that it might be wrong to assume that all copper-based artefacts consist actually of bronze. As we have seen above, Hittite texts clearly show that besides bronze, copper was worked into tools and weapons.

METALWORKING

Several Hittite sites in Anatolia, such as Boğazköy, Kuşaklı, Alaca Höyük, Gavurkalesi, Tepecik, Norşuntepe and Tarsus, have yielded metal workshops or at least finds related to metalworking.⁴⁴ So far, workshops seem to be located mainly in or near palaces and temples, for instance in the temple quarter of the Upper City and next to the Great Temple in the Lower City in Boğazköy-Ḫattuša. The written evidence clearly shows that metallurgy to a great extent was closely related to the temple- and palace economies. But it should be kept in mind that excavations up to now have focused largely on public buildings, while domestic dwellings have seldom been investigated. The large number of private workshops in Karum-Kaneš in Kültepe may caution us against making

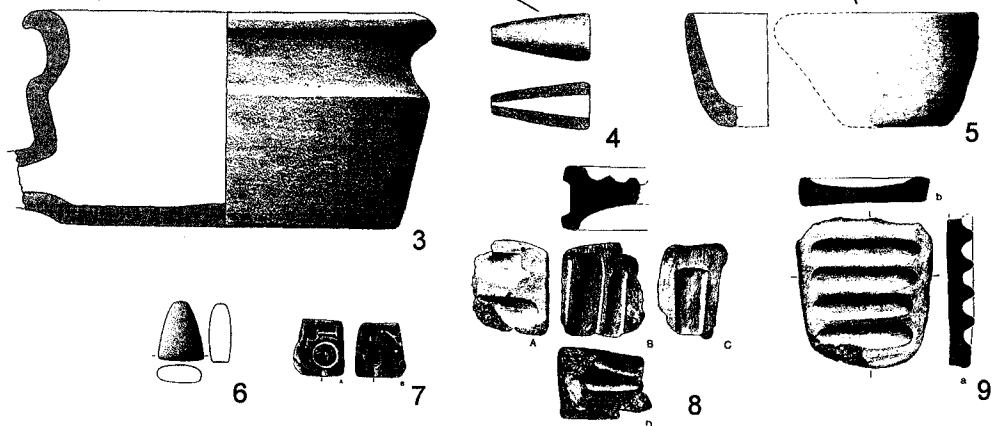
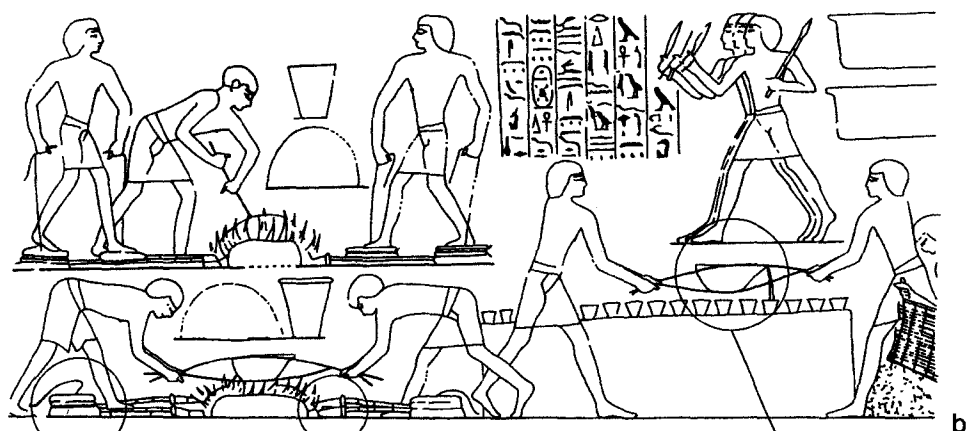
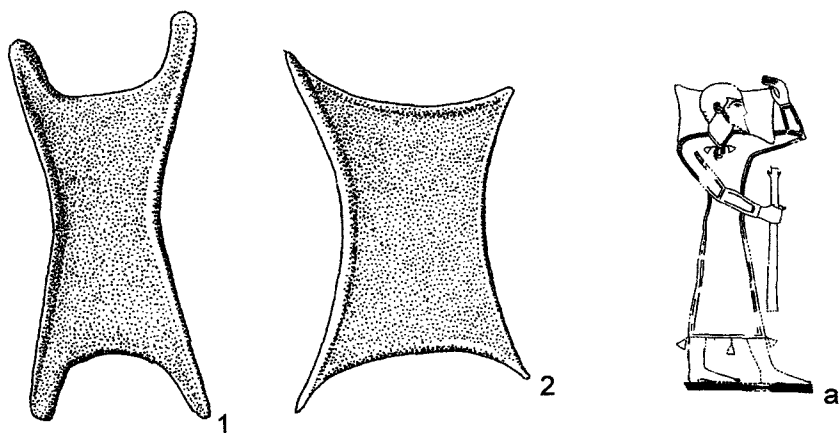
⁴² Pulak 2000, 150-55. These tin ingots have been isotopically analysed, and demonstrate that the tin does not originate from known ores in England or Central Europe.

⁴³ Weisgerber and Cierny 2002.

⁴⁴ A. Müller-Karpe 1994; 2000.

Fig. 3. Finds related to metallurgical activities (3-9 to same scale):

- (1) and (2) Copper 'ox-hide' ingots from Cape Gelidonya, length (1) 74 cm, (2) 66 cm (after H. Müller-Karpe 1980, Taf. 161.34-35);
- (3) Pot-bellows from Alaca Höyük, diameter 37.5 cm (after A. Müller-Karpe 1994, Taf. 2.1);
- (4) Clay tuyères from Boğazköy, length 9 cm (after A. Müller-Karpe 1994, Taf. 3.14);
- (5) Clay crucible from Tarsus, height 10.2 cm (after A. Müller-Karpe 1994, Taf. 13.1);
- (6) Stone hammer from Boğazköy, length 5.4 cm (after A. Müller-Karpe 1994, Taf. 62.14);
- (7) Stone mould for ornaments of precious metal from Tarsus (after A. Müller-Karpe 1994, Taf. 51.4);
- (8) Stone mould for axe from Boğazköy (after A. Müller-Karpe 1994, Taf. 25.5);
- (9) Clay mould for bar-shaped ingot from Alişar Höyük; (a) A Syrian bringing 'ox-hide' ingots on Egyptian wall-painting from Tomb 100 (Tomb of Rekhmire) in Thebes; (b) Scene of metalworking on Egyptian wall-painting from Tomb 100 in Thebes (after A. Müller-Karpe 1994, Taf. 15.4; (a) H. Müller-Karpe 1980, Taf. 14; (b) A. Müller-Karpe 1994, Abb. 82).



too rash generalisations. Thus, the concentration of metal workshops in or near public buildings in Hittite sites may be related to our limited state of knowledge rather than to an actual situation in the past.

Compared with the vast amount of finds relating to metallurgical activities in Kültepe during the Karum period, those from Hittite sites are relatively sparse. However, we still can reconstruct metallurgical processes for the Hittite period with a high degree of certainty:⁴⁵

Melting and alloying. Raw metal came to the settlements in the form of ingots (Fig. 3.1-2),⁴⁶ lumps or finished objects, which might have been produced already at or near the mining sites. These raw materials were melted in furnaces and crucibles (Fig. 3.5). From the beginning of the 2nd millennium BC onwards pot-bellows were used for providing air to the furnaces (Fig. 3.3). *Tuyères* (clay pipes) were used to conduct the air to the furnace or crucible (Fig. 3.4). Alloying (for example, copper with tin to produce bronze) was also carried out at this stage.

Casting. The molten metal was then poured into moulds to form artefacts (Fig. 3.7-9). Three types of mould are attested: open, bivalve and those for lost-wax casting. Most moulds were made of stone, usually sandstone, but moulds of baked clay are attested. Surprisingly, many moulds for casting ingots, not just moulds for artefacts, were revealed from Hittite settlements (Fig. 3.9).⁴⁷ Moulds for lost-wax casting, which consisted of clay or sand, do

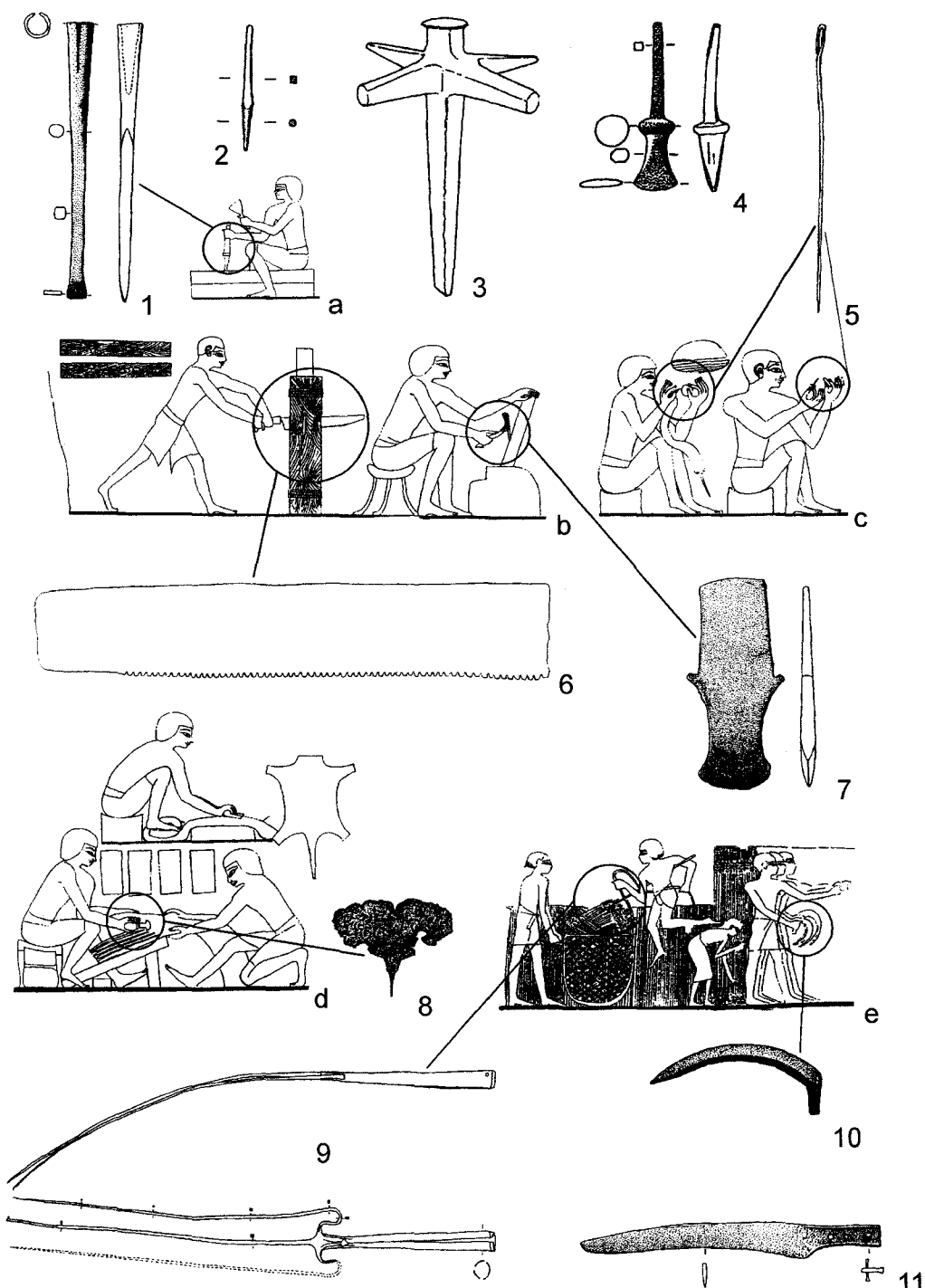
⁴⁵ See A. Müller-Karpe 2000.

⁴⁶ For systems of weights, see A. Müller-Karpe 1994; 2005.

⁴⁷ A. Müller-Karpe 2000, 119.

Fig. 4. Tools (various scales):

- (1) Bronze chisel from Boğazköy, length 19.8 cm (after A. Müller-Karpe 1994, Taf. 74.11);
- (2) Bronze awl from Boğazköy (after Boehmer 1972, Taf. XXXVIII.963);
- (3) Bronze multiple-chisel from Boğazköy, length 8.8 cm (after A. Müller-Karpe 1994, Taf. 65.10);
- (4) Bronze chisel(?) from Boğazköy, length 4.2 cm (after A. Müller-Karpe 1994, Taf. 63.10);
- (5) Bronze needle from Boğazköy, length 5.8 cm (after Boehmer 1972, Taf. XXII. 508);
- (6) Bronze saw from Boğazköy, length 67.5 cm (after Neve 1989, Abb. 1);
- (7) Bronze lugged-adze from Boğazköy, length 15 cm (after Erkanal 1977, Taf. 2.,21);
- (8) Bronze leather-knife(?) from Tarsus, length 7.3 cm (after H. Müller-Karpe 1980, Taf. 162, B12);
- (9) Bronze fork from Sivas Region. Eskişehir Museum, length 65.6 cm (after Yalçıklı 2000, Abb. 1a);
- (10) Bronze sickle-blade from Tarsus, length 12.6 cm (after H. Müller-Karpe 1980, Taf. 162, B13);
- (11) Bronze knife from Boğazköy; (a) Working scene with chisel and hammer on contemporary Egyptian wall-painting from Tomb 100 in Thebes; (b) Scene of wood-working on contemporary Egyptian wall-painting from Tomb 100 in Thebes; (c) Working scene with needle on contemporary Egyptian wall-painting from Tomb 100 in Thebes; (d) Scene of leather-working on contemporary Egyptian wall-painting from Tomb 100 in Thebes; (e) Scene of agricultural activities on contemporary Egyptian wall-painting from Tomb 52 (Tomb of Nakht) in Thebes (after H. Müller-Karpe 1980, Taf. 171.17; a-c: Taf. 16.3; d: Taf.15.6; e: Taf. 21A).



not usually survive as they had to be destroyed to remove the artefact. Judging from the objects themselves, the technique of lost-wax casting flourished in the age of the Hittite empire, especially for the production of statues or decorative artefacts.⁴⁸

Cold working. The cast objects needed to be processed further after their removal from the moulds. Hammers of various sizes, used for forging, repoussé or sinking, always consisted of stone (Fig. 3.6), while chisels (Fig. 4.1, 3-4) and awls (Fig. 4.2), used for fine work such as engraving or cutting, were made of bronze.

No metallurgical scenes are depicted in Hittite art, but contemporary evidence is well illustrated on the wall paintings of graves from Thebes in Egypt (Fig. 3b).⁴⁹

METAL ARTEFACTS

TOOLS

What role did metal artefacts play in the daily life of the Hittites? When visiting Hittite sites, we are always impressed by the monumental architecture. With what tools did the Hittites build these enormous structures? The most distinct character of Hittite monumental architecture is the exquisite combination of various building materials such as stone, brick and wood. Metal implements clearly played an important role in processing stone and wood during the building process.

P. Neve has tried to reconstruct this building process and the role of the tools.⁵⁰ The foundations of buildings always consisted of stone. The foundation stones were shaped mainly with relative simple stone hammers made of gabbro or basalt. Various tool marks on the stones also testify to the use of metal implements such as chisels (Fig. 4.1), picks, drills and saws, while the actual tools themselves have only rarely survived. For example, the dowel holes on the foundation stones or stone cores demonstrate the use of tubular drills, which consisted of metal tubes with a diameter between 4 and 6 cm. They were mechanically operated in combination with water and fine sand as an abrasive. Modern experiments demonstrated that a hole about 3 cm in diameter could be drilled at a rate of 6-9 cm per hour.⁵¹ Also cut marks made

⁴⁸ A. Müller-Karpe 1994, Abb. 88.

⁴⁹ Davies 1943.

⁵⁰ Neve 1989; 2002.

⁵¹ Seeher 2005, 23

by a pendulum saw can be observed on the foundation stones of temple buildings at Boğazköy.⁵²

Tools for woodworking are more numerous. Several tool types are found, such as axes, adzes, chisels (Fig. 4.1) and saws. A fragmentary bronze saw from Boğazköy still measures about 67.5 cm in length (Fig. 4.6).⁵³ Axes and adzes must have been used to process wood. Typical Hittite axes and adzes were lugged (Fig. 4.7).⁵⁴

Neve pointed out that these tools are comparable to finds from the other areas in the eastern Mediterranean. Similar drill holes, the use of pendulum saws, or finds of bronze saws are also known from Crete and in the Mycenaean palace of Tiryns in mainland Greece.⁵⁵ Also, an Egyptian type of axe has been found at Boğazköy.⁵⁶ He presumed that these finds indicate the presence of foreign specialists in the Hittite capital and that Hittite architecture was influenced by North Syria or the Late Minoan culture.⁵⁷ With these specialists travelled their specific tools and, of course, their knowledge and expertise.

Apart from building tools, agricultural tools should have had a large importance in Hittite society, as the economy without doubt was based on agriculture. In spite of this, relatively little is known about agricultural tools. Sickles (Fig. 4.10),⁵⁸ axes,⁵⁹ adzes⁶⁰ and tridents (forks, Fig. 4.9)⁶¹ can be identified clearly as agricultural implements in metal. Some knives could also have been used for agricultural and pastoral purposes (Fig. 4.11). In Hittite sites, no chert or flint sickle-blades have been found and we have to assume that sickle-blades generally consisted of metal. In contrast, no metal tools can be securely identified as digging tools, such as spades or ploughshares, even if sometimes adzes have been considered as hoe-like tools for working the soil.⁶² Judging from earlier and contemporary evidence from the Near East, the cattle-drawn

⁵² Neve 2002, 93. A bronze tool, the purpose of which is not clear (Neve 1992, 336, Abb. 34, also represented hypothetically as leather-knife on our Fig. 4.8), could have been used as blade of a pendulum saw (see Schwandner 1991, Abb. 6).

⁵³ Neve 1989.

⁵⁴ See Erkanal 1977; A. Müller-Karpe 1993.

⁵⁵ Neve 1989, 402; 2002, 94

⁵⁶ Neve 1993, 29 and Abb. 70.

⁵⁷ Neve 1989, 405.

⁵⁸ Boehmer 1972, 126-27.

⁵⁹ Boehmer 1972, 35-36, Taf. II.

⁶⁰ Boehmer 1972, 37-38, Taf. II.

⁶¹ Yalçıklı 2000. Ordinary forks for daily work were certainly made of wood, not metal. The inscription on one of the bronze tridents clearly relates this object to harvest work, but possibly in a more ritual context.

⁶² Brentjes 1952-53, 461. See also A. Müller-Karpe 1993.

plough surely must have existed in Hittite Anatolia,⁶³ but obviously it was made entirely of wood.

WEAPONS

Metal played an important role in the manufacture of weapons in the warfare of the Bronze Age.⁶⁴ The most frequently found offensive weapon in Hittite sites are arrowheads.⁶⁵ Spearheads had a long tradition in Anatolia. While spearheads from the first half of the 2nd millennium BC were hafted by means of a tang, with two slots in the blade providing additional support,⁶⁶ most of the Late Bronze Age spearheads were socketed.⁶⁷ Daggers and knives show a similar development. In the first half of the 2nd millennium BC the handles (normally of organic material) of daggers and knives were attached with simple rivets to the blade, but later the blade and hilt were cast in one piece, with inlays of wood or bone in the hilt.⁶⁸ In the 13th century BC more sophisticated short swords with a tang and crescent-shaped hand guard became popular throughout the whole eastern Mediterranean, except for the Aegean.⁶⁹ The more complicated weapons with flanges and sockets required bivalve moulds and additional cold hammering for their production. Battle-axes are characteristic weapons of the Hittites in the 2nd millennium BC. They are shaft-hole axes with a comb-like projection on the back.⁷⁰ Two-piece moulds were used

⁶³ Brentjes 1952-53.

⁶⁴ See the contribution by Lorenz and Schrakamp in this volume, pp. 136-38.

⁶⁵ Boehmer 1972, 104-05, Taf. XXVI-XXX; A. Müller-Karpe 1999, 66.

⁶⁶ See, for instance, the so-called Anitta dagger from Kültepe (Erkanal 1977, Taf. 14.2), which in fact is a spearhead.

⁶⁷ For example Boehmer 1972, Taf. XIII, no. 207.

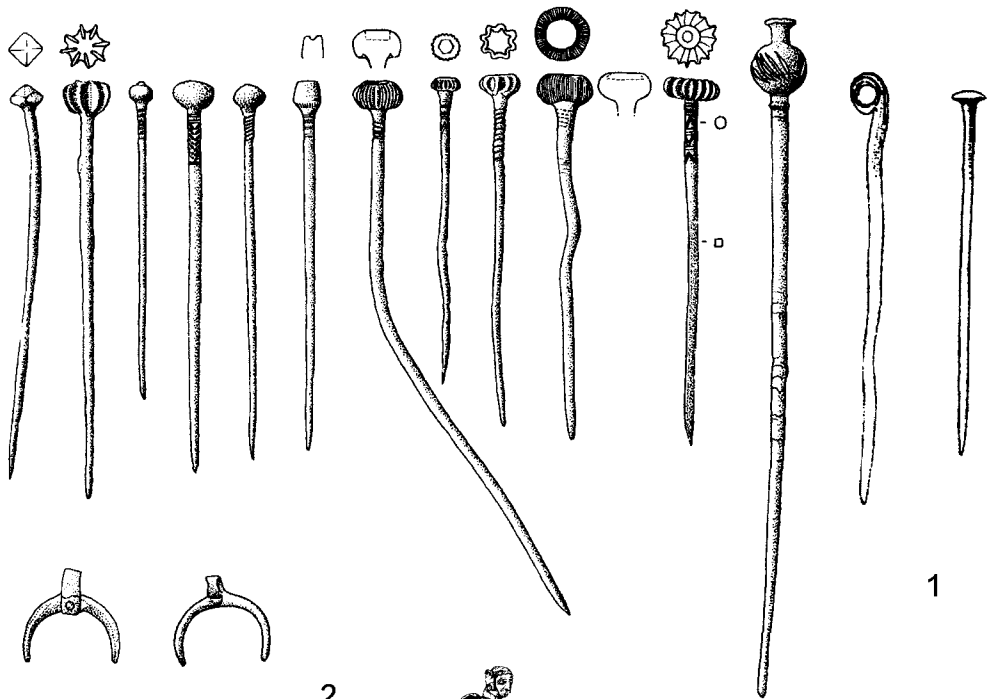
⁶⁸ Boehmer 1972, 41-45 and Abb. 22.

⁶⁹ Niemeier (2002, 298) assumed that this type is Hittite, while Geiger (1993, 217) supposed these swords to originate from northern Syria, based on the distribution of this type.

⁷⁰ Erkanal 1977; Yıldırım 2001, 132-34.

Fig. 5. Ornaments and figurines (same scale):

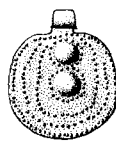
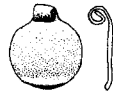
- (1) Various types of pins from Boğazköy (after H. Müller-Karpe 1980, Taf. 171.21-32; Boehmer 1972, Taf. XXI.469; Taf. XXII.519);
- (2) Crescent-shaped pendants from Boğazköy (after H. Müller-Karpe 1980, Taf. 171.34-35);
- (3) Round pendants from Boğazköy (after H. Müller-Karpe 1980, Taf. 171.38-40, 42);
- (4) Amulet figurines; (4a) Gold pendant depicting sitting goddess from Kayalıboğaz/Boğazköy; (4b) Bronze pendant depicting standing god. Anadolu Medeniyetleri Müzesi, Ankara;
- (4c) Gold ornament depicting sitting goddess with a child. Metropolitan Museum of Art, New York (after H. Müller-Karpe 1980, Taf. 173.1-2, 4);
- (5) Bronze statue of standing god from Dövelek. Anadolu Medeniyetleri Müzesi, Ankara (after H. Müller-Karpe 1980, Taf. 176, A5).



2



4a



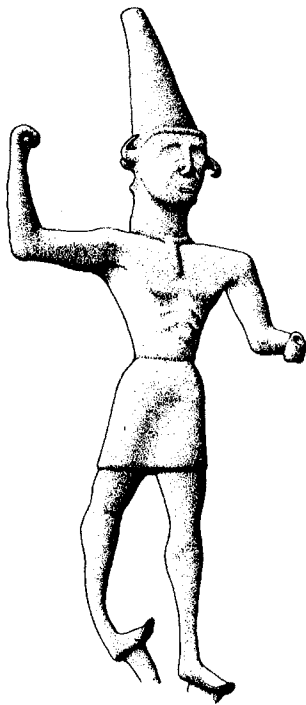
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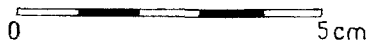
4b



4c



5



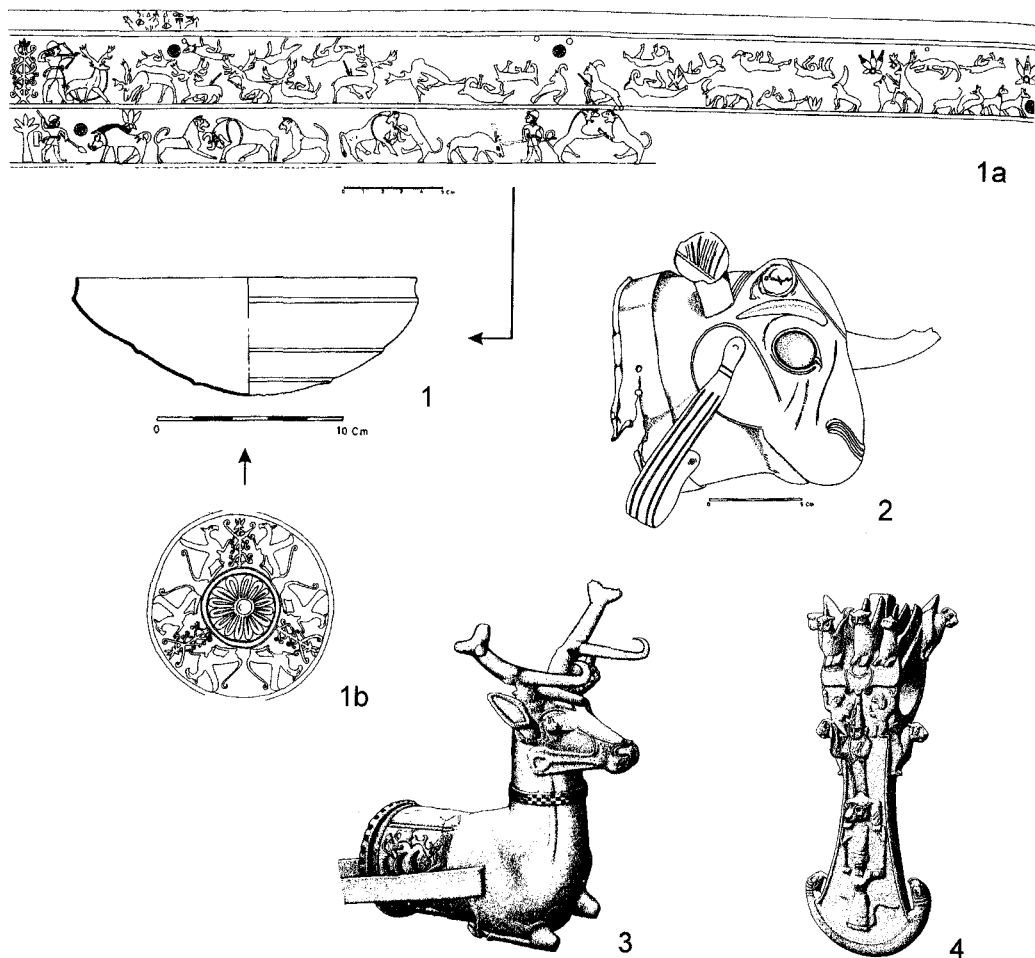


Fig. 6. Cultic vessels and weapon (to same scale): (1) Bowl from Kınık. Kastamonu Museum (after Emre and Çınaroğlu 1993, figs. 22-23); (2) Ox-head shaped rhyton from Kınık. Kastamonu Museum (after Emre and Çınaroğlu 1993, fig. 3a); (3) Silver rhyton from 'Anatolia'. Metropolitan Museum of Art, New York (after H. Müller-Karpe 1980, Taf. 176, A2); (4) Ceremonial axe from Şarkışla(?). Vorderasiatisches Museum, Berlin (after Erkanal 1977, Taf. 20).

to produce these weapons. Of the defensive weapons illustrated in the iconographic record or referred to in texts, just bronze armour-scales have been found at Boğazköy and Korucutepe.⁷¹

FURTHER EVIDENCE FOR THE USE OF METAL

Other objects of daily use also were produced in metal, such as vessels,⁷² styli for writing⁷³ and straw-tip beer-strainers.⁷⁴ The latter consisted of perforated and rolled sheet-metal, which were set on the tip of a drinking tube made of organic material, in order to filter impurities and foam from the beer.

Ornaments and jewellery frequently consisted of metal. Pendants are mainly round (Fig. 5.3) or crescent-shaped (Fig. 5.2), possibly representing the sun, stars and the crescent moon.⁷⁵ These types of ornaments have a long tradition in the ancient Near East and in addition to their decorative function might also have served as amulets. Pins are capped with various forms of heads, such as conical, spherical, pyramidal, lentil, mushroom, disc, dice or rolled (Fig. 5.1).⁷⁶ Earrings and finger rings also belonged to the personal ornaments.⁷⁷ Few gold ornaments were found at Hittite sites. Some splendid examples of gold objects are several finger rings⁷⁸ and several small gold figurines from Boğazköy (Fig. 5.4a)⁷⁹ and Karkamiš.⁸⁰ Compared with the frequent references to precious metals in written documents, the actual finds are very few.

Cultic objects, such as depictions of deities and various objects used in ceremonies were also frequently made of metal. Figurines in metal representing deities either show standing gods with a raised arm or sitting goddesses (Fig. 5.4-5).⁸¹ Vessels used for cultic purposes such as rhyta (Fig. 6.2-3)⁸² and cultic bowls (Fig. 6.1),⁸³ sometimes made of precious metals, show the high achievement of Hittite metalworking technology, namely lost-wax casting,

⁷¹ Boehmer 1972, 102-03, Taf. XXV. See Lorenz and Schrakamp in this volume for an extensive discussion, p. 140.

⁷² For example, see Emre and Çınaroğlu 1993.

⁷³ For example *Die Hethiter und ihr Reich* 2002, no. 146.

⁷⁴ A. Müller-Karpe 1999-2000, 109, Abb. 21.

⁷⁵ Detailed overview in Boehmer 1972, 19-20, Taf. I.

⁷⁶ Boehmer 1972, 79-80, Taf. XVII-XXII with typological table (Abb. 33).

⁷⁷ For example Boehmer 1972, 119-20, Taf. XXXV, nos. 1041-1042.

⁷⁸ Bittel 1976, 236-37; *Die Hethiter und ihr Reich* 2002, nos. 137-138.

⁷⁹ Bittel 1976, Abb. 171; *Die Hethiter und ihr Reich* 2002, no. 117.

⁸⁰ Bittel 1976, 211, Abb. 242-245.

⁸¹ Bittel 1976, 161-62, Abb. 170-171, 173.

⁸² For instance the silver rhyton in the Museum of Fine Arts in Boston (Bittel 1976, 160 [Abb.169]).

⁸³ Emre and Çınaroğlu 1993.

cold-hammering, repoussé, gilding, chasing and brazing. Shaft-hole axes with plastic decorations, certainly used in ritual or ceremonial contexts, such as the example from Şarkışla (Fig. 6.4),⁸⁴ also serve to illustrate the high technological achievements of lost-wax casting.

Important treaties normally were recorded on tablets made of bronze, silver or even gold. The only example that has been preserved is a bronze tablet from Boğazköy, recording the treaty between the Great King Tuthaliya IV and Kurunta, king of Tarhuntašša.⁸⁵

THE HITTITES AND EARLY IRON METALLURGY

According to the textual evidence (above), the Hittites seemed to have had a highly developed iron industry. It is often assumed that they may have played a pioneering role in the development of iron metallurgy.

J.C. Waldbaum⁸⁶ and recently Ü. Yalçın⁸⁷ have collected the evidence for iron artefacts before the beginning of the Iron Age (*ca.* 1200 BC) in Anatolia. Up to now some two dozen Anatolian iron finds from the latter half of the 2nd millennium BC have been published, originating mainly from Alaca Höyük, Boğazköy, and Korucutepe, but we should be aware of the fact that most of these objects originated from stratigraphically insecure contexts and that their dating should be taken with a pinch of salt. Compared with earlier periods, the number of iron objects clearly increased in the Late Bronze Age. Interestingly, many of these iron artefacts were tools and weapons, such as chisels, axes, nails, spear- and arrowheads, daggers and knives, while in earlier periods iron was mainly used for prestige objects and ornaments. This archaeological evidence could support the evidence from the written sources. Thus some development in iron metallurgy seems to have taken place during Hittite Empire period. However, it has to be emphasised that iron objects still were relatively rare in the Hittite period, when compared with the enormous quantity of bronze artefacts, and we might conclude that iron was still exceptional even in the Empire period.

‘Black iron’, which is mentioned in written documents, has sometimes been interpreted as meteoric iron. The archaeological finds do not allow any conclusions to be drawn about the nature or origin of this material.⁸⁸ However,

⁸⁴ Bittel 1976, 299, Abb. 341; *Die Hethiter und ihr Reich* 2002, no. 147.

⁸⁵ Otten 1988.

⁸⁶ Waldbaum 1980.

⁸⁷ Yalçın 1999; 2005 (more extensive).

⁸⁸ Yalçın 1999; 2005, 499.

judging from its quantities mentioned in written texts, it is hard to conclude that it was indeed of meteoric origin.

Little archaeometallurgical analysis of Hittite iron artefacts has been undertaken.⁸⁹ Some metallographical analyses of speiss and artefacts from Boğazköy⁹⁰ indicate that Hittite metallurgists lacked a good knowledge of or control over the smelting process, and did not understand the process of carburisation, which is indispensable for producing steel. There is no clear evidence for the deliberate production of steel until the 1st millennium BC, even if steel has been reported from Level III (dated approximately to the whole 2nd millennium BC) at Kaman Kalehöyük in central Anatolia.⁹¹ The Hittite term 'first-class iron' (AN. BAR.SIG₅) might refer to steel, which may have been produced occasionally, but we cannot yet prove this assumption.

The nature of the Hittite iron industry still raises many questions. Answering them may also be important for solving the problem of when, where, and how the Age of Iron in ancient Near East began.

BIBLIOGRAPHY

- Akanuma, H. 1995: 'Metallurgical Analysis of Iron and Slags from the site of Kaman-Kalehöyük'. In H.I.H. Prince Takihito Mikasa (ed.), *Essays on Ancient Anatolia and its Surrounding Civilizations (BMECCJ 8)* (Wiesbaden), 59-88.
- 2002: 'Iron Objects from the Architectural Remains of Stratum III and Stratum II at Kaman-Kalehöyük: Correlation between composition and Archaeological Levels'. AAS 11 (= *Kaman-Kalehöyük 11*), 191-200.
- Anheuser, K. 1999: *Im Feuer vergoldet. Geschichte und Technik der Feuervergoldung und der Amalgamversilberung* (AdR-Schriftenreihe zur Restaurierung und Grabungstechnik 4) (Stuttgart).
- Bittel, K. 1975: 'Altkleinasiatische Pferdetrensen'. *IstMitt* 25, 301-11.
- 1976: *Die Hethiter. Die Kunst Anatoliens vom Ende des 3. bis zum Anfang des 1. Jahrtausens vor Christus* (Munich).
- Boehmer, R.M. 1972: *Die Kleinfunde von Boğazköy aus den Grabungskampagnen 1931-1939 und 1952-1969* (Boğazköy-Hattuša VII = WVDOG 87) (Berlin).

⁸⁹ Recently, Ünsal Yalçın analysed a 'Hittite' iron sword at the Ruhr Museum in Essen and concluded that the 'damast' technique (making 'Damascus Steel' with lamination) was already known in the Hittite period (Yalçın 2005, 449, Abb. 7-8). This sword, however, was not excavated but bought from the art market. It seems to originate from north-western Iran (or eastern Anatolia?) and to date a little later (about the turn of 2nd and 1st millennia BC?) based on the shape of its haft (Medvedskaya's Type V: Medvedskaya 1982, 73-74), 'bimetallism' and the 'casting-on' technique (Maxwell-Hyslop and Hodges 1964).

⁹⁰ Muhly *et al.* 1985.

⁹¹ Akanuma 1995; 2002.

- Brentjes, B. 1952-53: 'Untersuchung zur Geschichte des Pfluges (Bronzezeit)'. *Wissenschaftliche Zeitschrift der Martin-Luther-Universität Halle-Wittenberg, Gesellschafts- und Sprachwissenschaftliche Reihe* II-10, 441-89.
- Davies, N. 1943: *The Tombs of Rekh-mi-Re at Thebes* (Publications of the Metropolitan Museum of Art. Egyptian Expedition 11) (New York).
- Die Hethiter und ihr Reich 2002: *Die Hethiter und ihr Reich. Das Volk der 1000 Götter* (Bonn).
- Emre, K. 1991: 'Cemeteries of second Millennium B.C. in Central Anatolia'. In H.I.H. Prince Takihito Mikasa (ed.), *Essays on Ancient Anatolian and Syrian Studies in the 2nd and 1st Millennium B.C. (BMECCJ 4)* (Wiesbaden), 1-15.
- Emre, K. and Çınaroğlu, A. 1993: 'A Group of Metal Hittite Vessels from Kınık-Kastamonu'. In Mellink, M.J., Porada, E. and Özgüç, T. (eds.), *Aspects of Art and Iconography: Anatolia and its Neighbors. Studies in Honor of Nimet Özgüç* (Ankara), 675-713.
- Erkanal, H. 1977: *Die Äxte und Beile des 2. Jahrtausends in Zentralanatolien (PBF IX. 8)* (Munich).
- Geiger, A. 1993: 'Ein Schwertheft aus dem Stadtviertel der Oberstadt von Boğazköy-Ḫattuša'. *IstMitt* 43, 213-17.
- Hoffner, H.A. 1997: *The Laws of the Hittites – A Critical Edition* (Leiden/New York/Cologne).
- Košak, S. 1986: 'The Gospel of Iron'. In Hoffner, H.A. and Beckman, G.M. (eds.), *Kaniššuwat. A Tribute to Hans G. Güterbock on his Seventy-Fifth Birthday, May 27, 1983* (Assyriological Studies 23) (Chicago), 125-35.
- Maxwell-Hyslop, R. and Hodges, H.W.M. 1964: 'A Note on the Significance of the Technique of 'Casting-on' as applied to a group of Daggers from North-West Persia'. *Iraq* 26, 50-53.
- Medvedskaya, I.N. 1982: *Iran: Iron Age I (BAR International Series 126)* (Oxford).
- Moorey, P.R.S. 1971: 'The Loftus Hoard of Old Babylonian Tools from Tell Sifr in Iraq'. *Iraq* 33, 61-86.
- Muhly, J.D., Maddin, R., Stech, T. and Özgen, E. 1985: 'Iron in Anatolia and the Nature of the Hittite Iron Industry'. *AS* 35, 67-84.
- Müller-Karpe, A. 1993: 'Hethitische Dechsel'. *IstMitt* 43, 227-34.
- 1994: *Altanatolisches Metallhandwerk* (Offa-Bücher 75) (Neumünster).
- 1999: 'Untersuchungen in Kuşaklı 1998'. *MDOG* 131, 57-113.
- 1999-2000: 'Die Akropolis der hethitischen Stadt Kuşaklı-Sarissa'. *NBA* 16, 91-110.
- 2000: 'Zur Metallverarbeitung bei den Hethitern'. In Yalçın, Ü. (ed.), *Anatolian Metal*, vol. 1 (Der Anschnitt Beiheft 13/ Veröffentlichungen aus dem Deutschen Bergbau-Museum Bochum 92) (Bochum), 113-24.
- 2005: 'Metallbarren bei den Hethitern'. In Yalçın *et al.* 2005, 485-92.
- Müller-Karpe, H. 1980: *Handbuch der Vorgeschichte*, vol. 4, pt 3 (Munich).
- Neve, P. 1989: 'Eine hethitische Bronzesäge aus Ḫattuša-Boğazköy'. *IstMitt* 39, 399-406.
- 1992: 'Die Ausgrabungen in Boğazköy-Ḫattuša 1991'. *AA*, 307-38.
- 1993: *Ḫattuša. Stadt der Götter und Tempel. Neue Ausgrabungen in der Hauptstadt der Hethiter* (Mainz).
- 2002: 'The Great Temple in Boğazköy-Ḫattuša'. In Hopkins, D.C. (ed.), *Across the Anatolian Plateau. Readings in the Archaeology of Ancient Turkey* (Winona Lake, IN), 77-98.

- Niemeier, W.-D. 2002: 'Ḫattuša und Ahhijawa im Konflikt um Millawanda'. In *Die Hethiter und ihr Reich*. 2002, 294-99.
- Omura, S. 1996: 'A Preliminary Report of the Ninth Excavation at Kaman-Kalehöyük (1994)'. In H.I.H. Prince Takihito Mikasa (ed.), *Essays on Ancient Anatolia and Syria in the Second and Third Millennium B.C. (BMECCJ 9)* (Wiesbaden), 87-134.
- Otten, H. 1959: 'Eine Lieferungsliste zum Totenritual der hethitischen Könige'. *Welt des Orients* 2, 477-79.
- 1988: *Die Bronzetafel aus Boğazköy. Ein Staatsvertrag Tuḫaljas IV (StBoT Beiheft 1)* (Wiesbaden).
- Postgate, J.N. 1992: *Early Mesopotamia. Society and Economy at the Dawn of History* (London/New York).
- Pulak, C. 2000: 'The Copper and Tin Ingots from the Late Bronze Age Shipwreck at Uluburun'. In Yalçın, Ü. (ed.), *Anatolian Metal*, vol. 1 (Der Anschnitt Beiheft 13/Veröffentlichungen aus dem Deutschen Bergbau-Museum Bochum 92) (Bochum), 137-57.
- Schaeffer, C.F.-A. 1956: *Ugaritica III: Sceaux et cylindres hittites, épée gravée du cartouche de Mineptah, tablettes chyro-minoennes et autres découvertes nouvelles de Ras Shamra* (Mission de Ras Shamra 8/ Bibliothèque archéologique et historique 64) (Paris).
- Schwandner, E.-L. 1991: 'Der Schnitt im Stein. Beobachtungen zum Gebrauch der Steinsäge in der Antike'. *Diskussion zur archäologischen Bauforschung* 5, 216-23.
- Seeher, J. 2005: 'Bohren wie die Hethiter: Rekonstruktion von Bohrmaschinen der Spätbronzezeit und Beispiele ihrer Verwendung'. *IstMitt* 55, 17-36.
- Siegelová, J. 1984: 'Gewinnung und Verarbeitung von Eisen im Hethitischen Reich im 2. Jahrtausend v. u. Z.'. *Annals of the Náprstek Museum* 12, 71-168.
- 1986: *Hethitische Verwaltungspraxis im Lichte der Wirtschafts- und Inventardokumente*, 3 vols. (Prague).
- 1993: 'Metalle und Metallurgie. A. II. In den heth. Texten'. *RLAss* VIII.1-2, 112-19.
- 1994: 'Anwendung von Kupfer und Bronze in Anatolien anhand der hethitischen Texte'. In Wartke, R.-B. (ed.), *Handwerk und Technologie im alten Orient. Ein Beitrag zur Geschichte der Technik im Altertum* (Internationale Tagung Berlin, 12.-15. März 1991) (Mainz), 119-124.
- Süel, A. 1998: 'Ortaköy-Şapinuwa: Bir Hitit Merkezi'. *TÜBA-AR* 1, 37-61.
- Waldbaum, J.C. 1980: 'The first archaeological appearance of iron and the transition to the Iron Age'. In Wertime, T.H. and Muhly, J.D. (eds.), *The Coming of the Age of Iron* (New Haven/London), 69-98.
- Weisgerber, G. and Cierny, J. 2002: 'Tin for Ancient Anatolia?'. In Yalçın, Ü. (ed.), *Anatolian Metal*, vol. 2 (Der Anschnitt Beiheft 15/Veröffentlichungen aus dem Deutschen Bergbau-Museum Bochum 109) (Bochum), 179-87.
- Yalçıklı, D. 2000: 'Zwei Bronzegabeln aus Zentralanatolien'. *IstMitt* 50, 113-30.
- Yalçın, Ü. 1999: 'Early Iron Metallurgy in Anatolia'. *AS*, 177-87.
- 2005: 'Zum Eisen der Hethiter'. In Yalçın et al. 2005, 493-502.
- Yalçın, Ü., Pulak, C. and Slotta, R. (eds.) 2005: *Das Schiff von Uluburun. Welthandel vor 3000 Jahren* (Exhibition catalogue) (Bochum)

- Yener, A. 2000: *The Domestication of Metals: the Rise of Complex Metal Industries in Anatolia* (Leiden).
- 2002: 'Swords, Armor and Figurines: A Metalliferous View from the Central Taurus'. In Hopkins, D.C. (ed.), *Across the Anatolian Plateau. Readings in the Archaeology of Ancient Turkey* (Winona Lake, IN), 35-41.
- Yıldırım, T. 2001: 'A Group of Hittite Bronze Objects from the Seben District of Bolu'. *Anatolica* XXVII, 127-43.

CHAPTER 12

FOREIGN CONTACTS OF THE HITTITES*

Hermann GENZ

Abstract

This chapter attempts to outline the nature and extent of the foreign contacts of the Hittites by taking textual as well as archaeological material into account. Foreign objects seem to have reached Ḫatti mainly by gift exchange, as tribute or as war booty, while there is very little evidence for actual trade. Equally, Hittite objects found outside Central Anatolia have to be interpreted as the remnants of royal gift exchange or as the belongings of Hittite officials in regions that came under Hittite rule. In conclusion, trade seems to have played only a limited role in Ḫatti.

INTRODUCTION

Contacts to regions beyond the Hittite heartland in Central Anatolia are attested from the time of the first Great King, Ḫattušili I, down to the end of the Hittite empire in the early 12th century BC. The nature and extent of foreign contacts of course changes over time with the waxing and waning of Hittite power. Textual sources, mainly the archives from the Hittite capital Ḫattuša but also Egyptian, Assyrian and Babylonian texts, enable us to reconstruct the diplomatic and military contacts with neighbouring regions to a large extent.

On the other hand, Hittite sources are largely silent on matters of trade. Here only archaeology might be able to fill in the gaps. However, in comparison with other regions of the eastern Mediterranean during the Late Bronze Age, imported objects are surprisingly rare in Central Anatolia. Also Hittite objects are not common beyond the Hittite heartland, even in regions dominated politically by the Hittites (Fig. 1).

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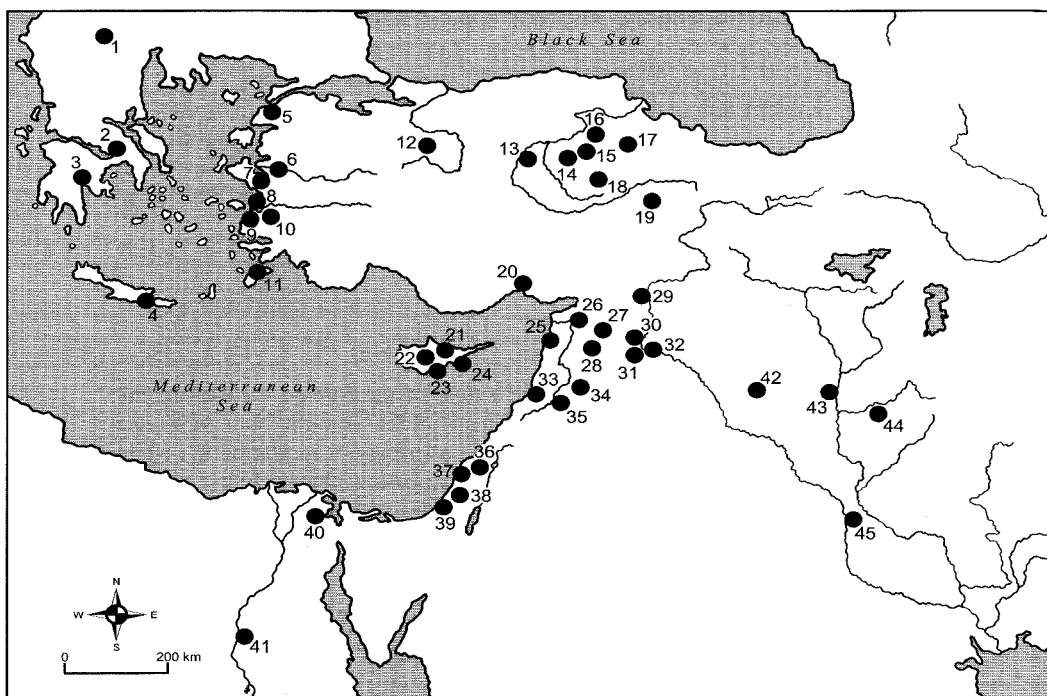


Fig. 1. Map showing sites mentioned in the text: (1) Nezero, (2) Thebes, (3) Mycenae, (4) Mirabello, (5) Troy, (6) Karabel, (7) Metropolis, (8) Kuşadası, (9) Miletus, (10) Suratkaya, (11) Ialysos, (12) Şarhöyük-Dorylaion, (13) Kırıkkale, (14) Boğazköy-Ḫattuša, (15) Alaca Höyük, (16) Ortaköy-Şapinuwa, (17) Maşat Höyük, (18) Alishar Höyük, (19) Kuşaklı-Sarissa, (20) Tarsus, (21) Hagia Paraskevi, (22) Tamassos, (23) Kalavassos-Hagios Demetrios, (24) Hala Sultan Tekke, (25) Ras Şamra-Ugarit, (26) Alalakh, (27) Ḫalab/Aleppo, (28) Tell Mardīḫ-Ebla, (29) Karkamiš, (30) Emar, (31) Tell Faqous, (32) Tell Fray, (33) Tell Kazel, (34) Qatna, (35) Qadeš, (36) Megiddo, (37) Tel Nami, (38) Aphek, (39) Tell el-Fara (S), (40) Pi-Ramesse, (41) Tell el-Amarna, (42) Dur Katlimmu, (43) Aššur, (44) Nuzi, (45) Babylon.

This overview will list the evidence of Hittite foreign contacts according to written sources as well as the archaeological material, in order to evaluate the nature and extent of these contacts.¹

¹ Though many studies have been published concerning certain aspects of foreign relations, to the best of my knowledge no detailed study encompassing all textual and archaeological evidence for the foreign relations of the Hittites has appeared up to now. Currently, S. Helft is writing her doctoral thesis on this topic at the University of Pennsylvania. A lack of space here precludes my giving a complete list of the textual and archaeological evidence for the foreign contacts of the Hittites. Only some better known objects will be discussed, followed by some general conclusions about the nature of the foreign contacts. As one of the main aims of this paper is to compare the textual and archaeological evidence for foreign contacts, it will not deal with

THE WEST

The study of Hittite relations towards the west, i.e. the west coast of Anatolia and the Aegean, was long hampered by our limited knowledge of the historical geography of the region. Most Hittite geographical terms referring to that region have been located with a high degree of probability only within the past few years, thanks mainly to the discovery of new inscriptions and to the reinterpretation of ones long known.² Textual sources provide evidence for a number of military activities of the Hittites in western Anatolia. Tuḫaliya I/II in the later 15th century BC seems to have been the first Hittite king whose military activities in western Anatolia are attested. He fought successfully against Arzawa and defeated the Aššuwān Confederacy.³ Military as well as diplomatic contacts between Hittite kings and western Anatolian states are also documented for Tuḫaliya III,⁴ Šuppiliuma I,⁵ Muṣili II, who defeated Arzawa and divided it up into the three vassal kingdoms of Mira, Hapalla and the Seha Riverland,⁶ Muwatalli II⁷ and Tuḫaliya IV.⁸ However, Hittite activities in the west seem to have been mainly defensive in nature.

Aḫḫiyawa is mentioned 25 times in Hittite sources.⁹ Nowadays it is generally agreed that this geographical term refers to the Mycenaean world or at least parts of it.¹⁰ First contacts between Ḫatti and Aḫḫiyawa are attested in the reign of Tuḫaliya I/II; the last mention of Aḫḫiyawa in Hittite sources is found during the reign of Tuḫaliya IV. Thus the contacts span the period from the late 15th to the late 13th century BC.¹¹ They are mostly of a military or diplomatic nature, whereas trade relations are not mentioned at all.¹²

The westernmost Hittite site identified so far seems to have been Šarhöyük-Dorylaion, where a Hittite bulla was found recently.¹³ Further to the west

several regions where contacts with the Hittites are attested only in written documents, but for which no archaeological evidence has yet come to light, for example the Kaška lands in the Pontic Mountains or Lycia.

² Heinhold-Krahmer 1977; Starke 1997; Hawkins 1998; Niemeier 1998.

³ Bryce 1998, 134-37; Klengel 1999, 111.

⁴ Bryce 1998, 163-65; Klengel 1999, 133.

⁵ Klengel 1999, 149-52.

⁶ Bryce 1998, 209-14; Klengel 1999, 188-96.

⁷ Bryce 1998, 244-48; Klengel 1999, 212-14.

⁸ Bryce 1998, 339-44; Klengel 1999, 278.

⁹ Cline 1994, 69; Bryce 2003.

¹⁰ Bryce 1989a; 1989b; 2003; Cline 1994, 69; Hawkins 1998, 30-31; Mee 1998, 142; Mountjoy 1998, 47-51; Niemeier 1998, 19-25.

¹¹ Bryce 1989b.

¹² Cline 1991a, 4-5; Bryce 2003.

¹³ Darga and Starke 2003. For a recent summary of Hittite finds in Šarhöyük-Dorylaion, see Darga 2004.

evidence for Hittite objects or Hittite influence in western Anatolia is surprisingly limited. Whether the fortification system of the last Late Bronze Age phase in Miletus is of Hittite origin is still hotly debated.¹⁴ The same site produced a Mycenaean sherd depicting what appears to be a Hittite horned crown.¹⁵ Further objects from Miletus of allegedly Hittite origin are more problematic. So-called Hittite swords¹⁶ are of a type that is quite widespread in the Near East,¹⁷ thus need not necessarily be of Hittite origin, and the oft-quoted Hittite pilgrim flask from Miletus has proven to be of western rather than Central Anatolian origin.¹⁸ A stamp-seal showing Hittite influence was recently published from Metropolis,¹⁹ as well as a biconvex seal of Central Anatolian type found at Troy in a context dating to Troy VIIB.²⁰ Both seals originate from contexts postdating the period of the Hittite empire and thus cannot serve to elucidate Hittite contacts to the west. A bronze figurine from the same site, dating to Troy VIIa, betrays Hittite elements, but cannot be taken as a true Hittite import,²¹ whereas another bronze figurine, discovered at Kuşadası in a mediaeval context, undoubtedly represents a Hittite warrior god.²² Again the date when it actually reached the west remains unknown.

Only recently the relief at Karabel was identified as depicting a local west Anatolian ruler, namely Tarkasnawa of Mira.²³ However, the style of the relief clearly shows considerable Hittite influence. New evidence on the extension of this kingdom is provided by a recently discovered inscription of Kupanta-Kuruntiya, a great prince of Mira, in the Latmos Mountains at Suratkaya.²⁴

Very few objects of secure Hittite origin have been discovered in the Aegean.²⁵ One of the earliest Hittite objects is a silver vessel in the shape of a stag from Shaft Grave VI in Mycenae (Fig. 5.3).²⁶ Although no exact comparison is known from Hittite Anatolia so far, a silver vessel in the shape of a stag is mentioned as a present sent to the Egyptian Pharaoh in a letter of

¹⁴ Niemeier 1998, 38; 2002, 298.

¹⁵ Niemeier 1998, 39.

¹⁶ Niemeier 1998, 39-40; 2002, 298.

¹⁷ Shalev 2004, 62-63. Up to now only one example of this type of sword has been found in the Hittite heartland at Boğazköy (see Geiger 1993).

¹⁸ Cline 1991b, 135; Niemeier 1998, 38.

¹⁹ Schachner and Meriç 2000. As this seal seems to date into LH IIIC, it postdates the end of the Hittite empire.

²⁰ Hawkins and Easton 1996.

²¹ Mellink and Strahan 1998; see also the comments by Schachner and Meriç 2000, 97.

²² Akdeniz 2004.

²³ Hawkins 1998.

²⁴ Peschlow-Bindokat 2001.

²⁵ Cline 1991b; 1994, 68.

²⁶ Cline 1991b, 134-35; Koehl 1995, 61-63.

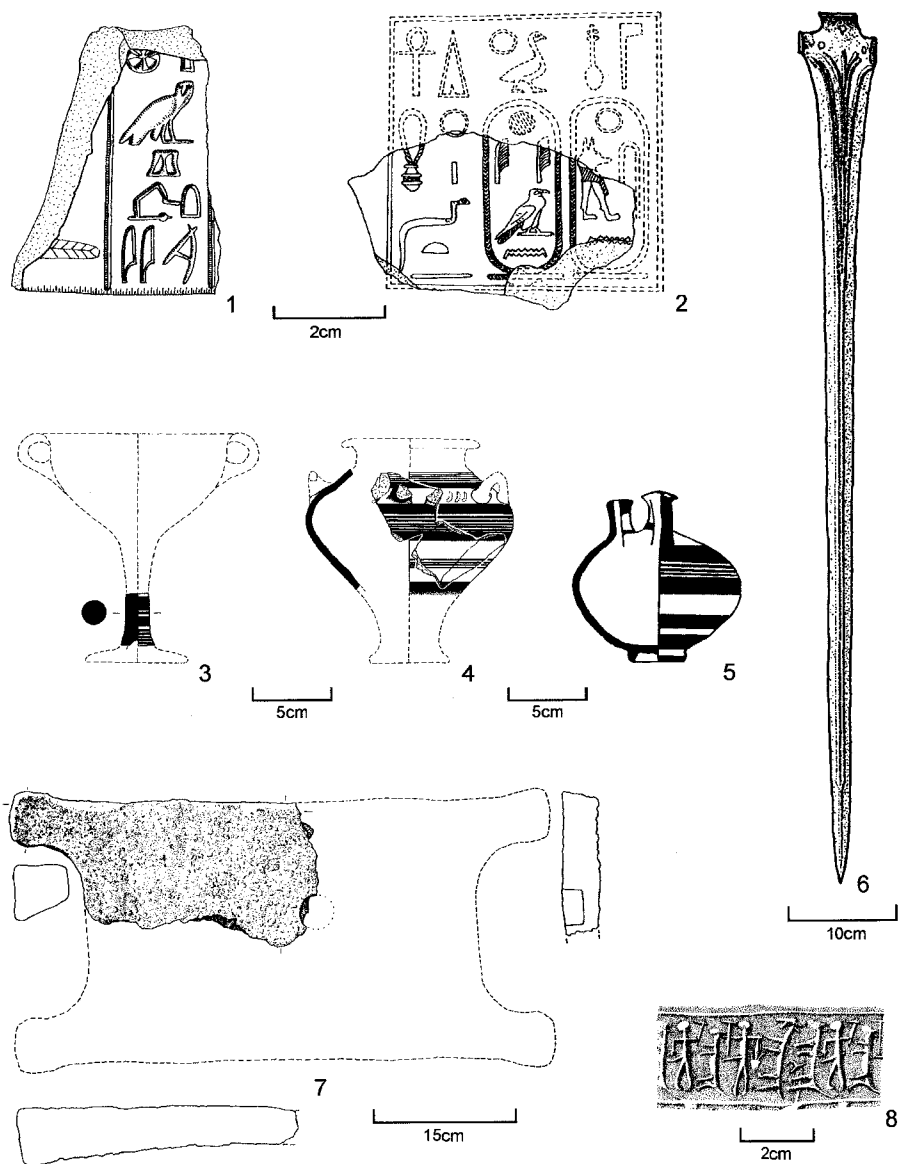


Fig. 2. Foreign objects from Hittite Anatolia: (1) Stela with inscription of Pharaoh Ramesses II from Boğazköy (after Bittel 1983, Abb. 83); (2) Obsidian vessel with inscription of Pharaoh Chian from Boğazköy (after Bittel 1983, Abb. 84); (3) Mycenaean sherd of a kylix from Boğazköy (after Genz 2004, Abb. 1a); (4) Mycenaean sherds of a small piriform jar from Kuşaklı (after Mielke 2004b, Abb. 13b); (5) Mycenaean stirrup jar from Maşat Höyük (after Özgünel 1996, 106, FS 171, 5); (6) Aegean or Western Anatolian sword from Boğazköy (after A. Müller-Karpe 1994, Abb. 2.2); (7) Fragment of an ox-hide ingot from Boğazköy (after A. Müller-Karpe 1980, Abb. 22); (8) Cylinder seal from Alaca Höyük (after Boehmer and Güterbock 1987, Abb. 81c).



Fig. 3. Ivory lid from Megiddo (after Alexander 1991, fig. 2).

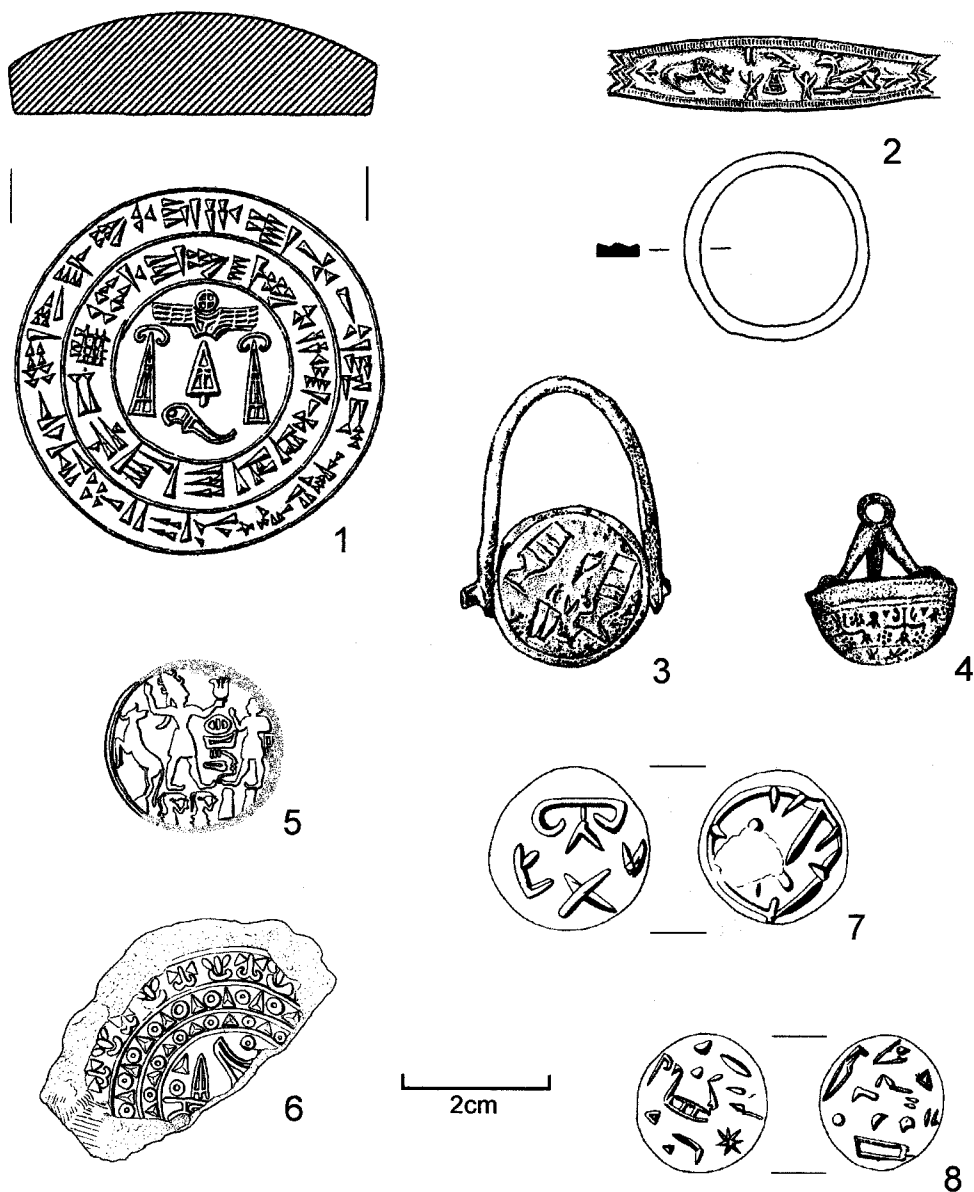


Fig. 4. Hittite seals and seal impressions from different sites: (1) Seal of Muršili II from Ugarit (after Beyer 2001, fig. 25a); (2) Signet-ring from Tel Nami (after Singer 1993, pl. IX); (3) Biconical seal from Ugarit (after Beyer 2001, fig. 25c); (4) Gold seal from Tamassos (after Beyer 2001, fig. 25b); (5) Seal impression from Emar (after Beyer 2001, Pl. F: C3); (6) Bulla from Tel Aphek (after Singer 1977, fig. 1); (7) Seal from Mirabello (after Boardman 1966, fig. 3); (8) Seal from Ialysos (after Boardman 1966, fig. 2).

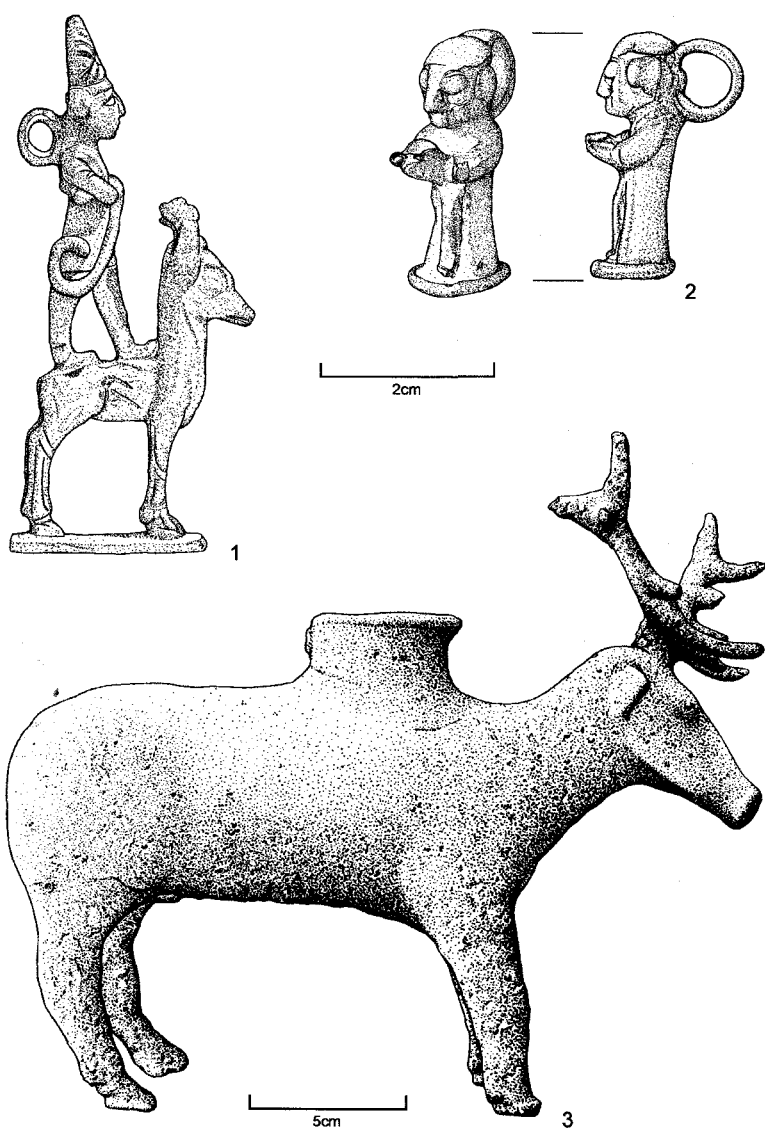


Fig. 5. Hittite statuettes from different sites: (1) Silver pendant from Kalavassos-Hagios Demetrios (after Herscher 1995, 272, fig. 15; drawing: H. Tsumoto); (2) Silver pendant from Tell el-Amarna (after Bell 1986, ill. 1; drawing: H. Tsumoto); (3) Silver stag from Mycenae (after H. Müller-Karpe 1980, Taf. 229.5).

Šuppiliuma I.²⁷ A statuette of a smiting god from Nezero in Thessaly might be Hittite or Syro-Palestinian in origin.²⁸ A cylinder seal made of lapis lazuli found at Thebes has an inscription in Luwian hieroglyphs, but the style of the seal itself is more North Syrian than Hittite.²⁹ Other objects showing Hittite influence include seals from Ialysos in Rhodes (Fig. 4.8), from Mirabello in Crete (Fig. 4.7) and one from Mycenae,³⁰ although none of these seals has a meaningful inscription, thus giving the impression that they were fashioned by illiterate craftsmen according to Hittite models.

The correspondence with the west Anatolian and Aegean rulers might have been written in Hittite,³¹ thus indicating a certain degree of cultural influence of the Hittites on the Aegean world.

Objects of Aegean or west Anatolian origin in Central Anatolia are equally sparse. Mycenaean pottery is known from only three sites in the Hittite heartland: besides the well-known finds from Maşat Höyük (Fig. 2.5),³² new finds emerged at Boğazköy-Ḫattuša (Fig. 2.3)³³ and Kuşaklı-Sarissa (Fig. 2.4).³⁴ A sword discovered at Boğazköy is clearly of an Aegean or west Anatolian type, which is confirmed by the cuneiform inscription engraved on it mentioning that it was dedicated by Tuḫaliya after he had defeated Aššuwa (Fig. 2.6).³⁵ An incision on a Hittite bowl from the same site depicts a warrior whose helmet is reminiscent of Mycenaean types.³⁶ Five clay bullae of the west Anatolian ruler Tarkasnawa of Mira were found at Boğazköy.³⁷ A bronze belt from Boğazköy showing a complex spiral pattern often is claimed as showing Mycenaean influence, but without clear justification.³⁸

On a relief vase recently discovered at Hüseyindede north-west of Boğazköy, bull-leaping scenes are depicted.³⁹ Instead of proving Aegean influence, this scene rather points to the fact that bull-leaping in cultic activities was quite widespread in the Bronze Age Near East.

²⁷ Koehl 1995, 63.

²⁸ Cline 1991b, 135. It has to be pointed out, however, that its provenance is not secure. Seeden (1980, 122-25) rather favours a Levantine origin.

²⁹ Porada 1981; Cline 1991b, 139.

³⁰ Boardman 1966; Cline 1991b, 136-37.

³¹ Bryce 1999.

³² Özgüç 1978, 66; 1982, 102-03; Mee 1978, 132-33; 1998, 141; Cline 1994, 68; Kozal 2003, 68.

³³ Genz 2004.

³⁴ Mielke 2004a, 26 and Abb. 8; 2004b, 155-57 and Abb. 13.

³⁵ Müller-Karpe 1994, 434-39; Cline 1996.

³⁶ Bittel 1976; Niemeier 1998, 42; 2002, 296.

³⁷ Hawkins 1998, 8-9.

³⁸ Boehmer 1972, 70-71; Cline 1994, 68.

³⁹ Sipahi 2001.

CILICIA

The campaigns conducted in northern Syria by the first Hittite kings Ḫattušili I and Muršili I actually imply Hittite control over Cilicia, although the region is not mentioned at all in the sources dating to the Old Hittite kingdom. We first hear of this region, now called Kizzuwatna, in the reign of Telipinu, who concluded a treaty of alliance with Išputaḫšu, the king of Kizzuwatna.⁴⁰ Diplomatic relations with Kizzuwatna were maintained under Telipinu's successors, but in the 15th century BC this region came under the growing influence of Mitanni.⁴¹ Either under the reign of Tuḫaliya I/II⁴² or under Šuppiluliuma I⁴³ Kizzuwatna was annexed and became an integral part of the Hittite empire.

The oldest Hittite object discovered so far in Cilicia is a land grant deed found in Tarsus, probably dating before the reign of Telipinu.⁴⁴ During the period of the Hittite empire a strong Hittite influence on Cilicia can be recognised in almost all aspects of the material culture.⁴⁵

SYRIA

The first Hittite king, Ḫattušili I, had expanded the Hittite realm into northern Syria, where he conquered Alalaḫ in the 17th century.⁴⁶ He was not able, however, to subdue the leading power of this region, Ḫalab-Jamḫad. The conquest of Ḫalab was only achieved by his successor Muršili I.⁴⁷ During the troublesome period that followed after Muršili's death, Ḫatti lost all its possessions south of the Taurus Mountains.

A possible campaign of Tuḫaliya I/II might have led to a destruction of Ḫalab in the later 15th century, but this action is referred to only in later texts such as the Talmi-Šarruma treaty.⁴⁸

It is not until the beginning of the Hittite empire period in the later half of the 14th century, during the reign of Šuppiluliuma I, that the Hittites became

⁴⁰ Yoshida and Kammenhuber 1995, 204; Bryce 1998, 111-13; Freu 2001, 15-17.

⁴¹ Yoshida and Kammenhuber 1995, 204; Bryce 1998, 126-28; Klengel 1999, 88; Freu 2001, 19-30.

⁴² Bryce 1998, 150-51; Klengel 1999, 112-14; Freu 2001, 25-30.

⁴³ Yoshida and Kammenhuber 1995, 211.

⁴⁴ Yoshida and Kammenhuber 1995, 206; Bryce 1998, 111.

⁴⁵ Garstang 1953, 237-52; Goldman 1956, 203-05, 242-54; Gates 2001; Symington 2001.

⁴⁶ Klengel 1992, 343; 1999, 44-55; Bryce 1998, 75-77.

⁴⁷ Klengel 1992, 346; 1999, 64-65; Bryce 1998, 102-05.

⁴⁸ Klengel 1992, 347; 1999, 114; Bryce 1998, 151-52; Singer 1999, 632.

active in northern Syria again. Šuppiluliuma campaigned extensively in Syria,⁴⁹ where among many other cities he conquered Karkamiš and established his son Šarri-Kušuh as viceroy there.⁵⁰ From this period onwards Karkamiš became the main Hittite administrative centre of northern Syria.⁵¹ Another son of Šuppiluliuma was established as the high priest of the Weather God in Halab.⁵²

Hittite power rested largely on vassal treaties which the Hittite kings concluded with the Syrian rulers. The Syrian kings were obliged to pay an annual tribute, and also to supply troops for Hittite campaigns.⁵³ Additionally, the loyalty of Syrian rulers was strengthened by dynastic marriages. Thus Bentešina of Amurru and Niqmaddu III of Ugarit both married Hittite princesses.⁵⁴ There are few clear indications of permanent military presence of the Hittites in Syria,⁵⁵ but a Hittite garrison may have been stationed at Tell Faqous near Emar.⁵⁶

Despite its long-standing importance as a trading city, Ugarit appears surprisingly late in Hittite sources. It is only around 1340 BC, when Šuppiluliuma I concluded a treaty with the Ugaritian king Niqmaddu II, that the city seems to enter the Hittite sphere of interest.⁵⁷ While in this first agreement Ugarit seems to have retained a more or less autonomous status, during the reign of Mušili II it became a vassal state of Ḫatti.⁵⁸ The tribute Ugarit had to pay to Ḫatti included wool, textiles and precious metal, and also required troops from Ugarit to be placed at the disposal of the Hittite kings, which for instance was the case in the Battle of Qadeš.⁵⁹ Especially during the later years of the Hittite empire Ugarit played a crucial role in supplying Ḫatti with the much needed grain.⁶⁰

So far no specific Syrian objects have been found in Central Anatolia. Also objects of Hittite origin are surprisingly scarce in Syria.⁶¹ Hittite cuneiform

⁴⁹ Klengel 1992, 348-51; 1999, 155-67; Bryce 1998, 174-93. New evidence for the Hittite campaigns is provided by the texts from the recent excavations at Qatna (see Richter 2002).

⁵⁰ Klengel 1992, 350-51; 1999, 162-67; Bryce 1998, 192-95.

⁵¹ Beckman 1992, 47; Klengel 1992, 352; 2001, 261-62.

⁵² Klengel 1992, 351.

⁵³ Beckman 1992, 45-46; Klengel 1992, 351-52; 2001, 259-62; Faist 2002.

⁵⁴ Beckman 1992, 46; Singer 1999, 680, 695; Klengel 2001, 263-64.

⁵⁵ Klengel 1999, 198; 2001, 267. But see Margueron (1982, 62) citing the Annals of Mušili II, who claims to have established a garrison in the land of Aštata.

⁵⁶ Margueron 1982; Beckman 1992, 44; 1996, 4-5.

⁵⁷ Klengel 1992, 348; 1999, 157-58; Neu 1995, 116; Bryce 1998, 177-79; Singer 1999, 634-35.

⁵⁸ Neu 1995, 117-18; Singer 1999, 636-37; Klengel 1999, 199.

⁵⁹ Neu 1995, 116-18; Singer 1999, 644; Dietrich 2001.

⁶⁰ Neu 1995, 121-22.

⁶¹ For a summary of Hittite relations with Syria, see Genz 2006a.

tablets have been found only in Ugarit,⁶² Emar⁶³ and Alalah.⁶⁴ The most commonly encountered Hittite objects in Syria are seals. While biconvex seals represent a genuine Anatolian tradition,⁶⁵ the cylinder seals of the Syro-Hittite style were manufactured in Syria itself. Biconvex seals or impressions were discovered at Ugarit⁶⁶ (Fig. 4.1, 3), Minet el-Beida,⁶⁷ Alalah,⁶⁸ Tell Kazel,⁶⁹ Ebla,⁷⁰ Tell Fray⁷¹ and Emar (Fig. 4.5).⁷² Further biconvex seals derive from Iron Age contexts at Karkamiš,⁷³ Deve Höyük,⁷⁴ Hama⁷⁵ and Tell Afis,⁷⁶ but it seems certain that these are residual finds originating from Late Bronze Age levels.

Syro-Hittite cylinder seals or impressions are known from Ugarit,⁷⁷ Ras Ibn Hani,⁷⁸ El-Qitar,⁷⁹ Tell Fray⁸⁰ and Emar.⁸¹

Other categories of Hittite objects are rarely encountered in Syria. Ugarit has produced a small electron figurine depicting a divine triad in a typical Hittite style.⁸² Small gold figurines with inlays of lapis lazuli depicting Hittite gods were found in an Iron Age grave at Karkamiš. The stylistic comparisons certainly support the dating of these objects to the Empire period.⁸³

Due to the insufficient knowledge of the development of Late Bronze Age pottery in Syria, the extent of Hittite ceramic imports in this region is difficult to assess. Jugs of a type characteristic of the Empire period in Central Anatolia are attested in Alalah⁸⁴ and Emar.⁸⁵ Tell Afis produced a pottery assemblage

⁶² Neu 1995, 126-27.

⁶³ Laroche 1982; Beckman 1992, 44; Salvini and Trémouille 2003.

⁶⁴ Niedorf 2002, 517-26.

⁶⁵ Gorny 1993.

⁶⁶ Schaeffer 1956, 1-23; Boehmer and Güterbock 1987, 76; Gorny 1993, 183; Singer 1999, 650. Of special interest is the discovery of a royal seal of Muṣili II in Ugarit, as this sometimes is suspected to be a Late Bronze Age forgery (Fig. 4.1) (see Neu 1995, 124-25; Singer 1999, 639; contrary view, Klengel 2001, 265).

⁶⁷ Gorny 1993, 183.

⁶⁸ Woolley 1955, 266-67; Singer 1977, 184; Gorny 1993, 183-84.

⁶⁹ Singer 1977, 184; Singer 1992, 232-33.

⁷⁰ Archi 1980b.

⁷¹ Archi 1980a; Matthiae 1980, 47-48.

⁷² Gorny 1993, 190; Beyer 2001, 19-163, 440-443; Starke 2001, 103-105; 2003, 91-92.

⁷³ Gorny 1993, 177.

⁷⁴ Gorny 1993, 177.

⁷⁵ Riis 1948, 131; Gorny 1993, 178.

⁷⁶ Archi 1998, 367-69.

⁷⁷ Schaeffer 1956, 23-30.

⁷⁸ Bounni *et al.* 1998, 86.

⁷⁹ Archi 1993, 203-06.

⁸⁰ Archi 1980a, 31-32; Matthiae 1980, 38-39.

⁸¹ Beyer 2001, 25-111.

⁸² Schaeffer 1956, 94-95.

⁸³ Seidl 1972.

⁸⁴ Woolley 1955, pl. CXI:39.

⁸⁵ Caubet 1982, fig. 31.

dated to the 12th century BC, which is comparable to a remarkable extent with pottery of the Hittite empire,⁸⁶ but the late date seems to imply a post-empire context.

Hittite monumental art is distinctly rare in Syria. Alalakh yielded a stone relief from Level I depicting a male figure in typical Hittite style. The accompanying inscription in Luwian hieroglyphs mentions 'Tuthaliya the great ... the king's son.' C.L. Woolley thought that the relief depicted Tuthaliya IV,⁸⁷ but newer investigations rather suggest that a Hittite governor of Mukish named Tuthaliya is represented.⁸⁸ From Halab/Aleppo a building inscription of Talmi-Šarruma, son of Telipinu, is known.⁸⁹

No clear evidence of Hittite architecture has been found in Syria up to now. Woolley's claim that the temple from Level III at Alalakh represented a Hittite building⁹⁰ can be confidently refuted, as it bears no resemblance to Hittite temples from Central Anatolia. J.-C. Margueron identified a building excavated at Emar as a *bit hilani* and compared it with Building E on Büyükkale in Boğazköy.⁹¹ However, the identification of Building E on Büyükkale itself as a *bit hilani* is rather dubitable, thus Margueron's hypothesis rests on rather weak foundations.⁹² Finally, Hittite influence is often mentioned in connection with the postern at Ugarit.⁹³ The right-angled turn attested there has so far been found only at Alaca Höyük; all other Hittite posterns are straight. As the function of these posterns is not yet properly understood, formal analogies should not necessarily be interpreted as evidence of Hittite influence.

NORTHERN MESOPOTAMIA/MITANNI

The Mitannian kingdom came into existence only after Muršili I had defeated Halab in the 17th century.⁹⁴ Campaigns of this king against the Hurrians are recorded.⁹⁵ During the Middle Hittite period Mitanni's power grew, and seems to have extended to some extent to Cilicia.⁹⁶ Only with the beginning of the

⁸⁶ Venturi 1998, 123-63; Mazzoni 2002, 133.

⁸⁷ Woolley 1955, 241-42 and pl. XLVIII.

⁸⁸ Niedorf 2002, 521-22.

⁸⁹ Kohlmeyer 2000, 8-9.

⁹⁰ Woolley 1955, 395 and fig. 32.

⁹¹ Margueron 1979, 153-76; 995, 130.

⁹² For a discussion of the possible *bit hilani* buildings in Emar and Boğazköy, see Genz 2006a, 503.

⁹³ Yon 1997, 41, figs. 16 and 18.

⁹⁴ Wilhelm 1982, 28-36; Klengel 2001, 257-58.

⁹⁵ Wilhelm 1982, 32; Klengel 1999, 64.

⁹⁶ Wilhelm 1982, 32; Bryce 1998, 126-28.

Empire period, under the reign of Šuppiluliuma I, did Ḫatti become active in northern Mesopotamia again and manage to conquer all Mitannian possessions west of the Euphrates.⁹⁷ Also during Šuppiluliuma's reign, dynastic quarrels lead to Hittite domination over the remaining parts of Mitanni, which now seems to have been called Ḫanigalbat.⁹⁸ In the 13th century BC the eastern part of Ḫanigalbat came under Assyrian influence, and the Hittite-Assyrian border followed the course of the Euphrates.⁹⁹

A strong Hurrian influence in Hittite culture, especially in the religious sphere, can be noted in the Empire period. This influence shows up mainly in Hurrian texts that were discovered in Ḫattuša and Ortaköy-Šapinuwa.¹⁰⁰ Furthermore, the training of chariot-horses largely depended on Hurrian knowledge, as evidenced by the Kikkuli treatise written in Hurrian.¹⁰¹ Otherwise, little Mitannian influence on the material culture of Ḫatti can be detected. Only two cylinder seals belonging to the Mitannian Kerkuk style, dating to the 13th century, were found at Boğazköy.¹⁰² On the other hand, an ivory figurine of Hittite origin depicting the goddess Ištar/Šauška came to light in Temple A in Nuzi, dating to the 15th century BC.¹⁰³

ASSYRIA

It was only with the decline of the kingdom of Mitanni in the 14th century that Assyria rose to power in northern Mesopotamia, quarrelling with Ḫatti over the remains of the Mitannian state.

While Muršili III (Urḫi-Teššub) in a letter still denied the Assyrian king Adad-Nirari I the right to bear the title 'Great King',¹⁰⁴ his successor Ḫattušili III counted the Assyrian kings together with the Egyptian Pharaoh and the Babylonian king as Great Kings. Especially during the reign of Tuḫaliya IV, the Assyrians expanded westward, fighting with the Hittites over the remains of the kingdom of Mitanni, which the Assyrian kings Adad-Nirari I and Šalmaneser I managed to conquer.¹⁰⁵ In a letter found in Ugarit, addressed to the king of this city, an Assyrian king – unfortunately the name is not

⁹⁷ Wilhelm 1982, 50; Bryce 1998, 169-77; Klengel 1999, 155-66.

⁹⁸ Wilhelm 1982, 52-53; Klengel 1992, 351; Bryce 1998, 199-203.

⁹⁹ Wilhelm 1982, 54-57; Faist 2001, 213.

¹⁰⁰ Wilhelm 1982, 81-104; Yoshida and Kammenhuber 1995, 202-03; Ünal 1998.

¹⁰¹ Starke 1995.

¹⁰² Boehmer and Güterbock 1987, 108.

¹⁰³ Mellink 1964.

¹⁰⁴ Faist 2001, 17-19.

¹⁰⁵ Singer 1985, 102; Bryce 1998, 347-54.

preserved; it might be either Šalmaneser or Tukulti-Ninurta – informs the recipient of a serious defeat of the Hittite king in the battle of Niḫriya, to be located in the region of Diyarbakır. It is very likely that this battle dates to the later reign of Tuḫaliya IV.¹⁰⁶

Another indication of the strained relations between Ḫatti and Assyria is found in a letter to Šaušgamuwa, king of Amurru with a passage which has usually been interpreted as a trade embargo directed against Assyria. It is likely, however, that not the actual exchange of goods, but rather diplomatic contacts between Ḫatti's Syrian vassals and Assyria were to be prevented.¹⁰⁷ Despite this possible embargo, traders from Emar, which was under Hittite domination at the time, were active in Assur according to a text from Dur Katlimmu.¹⁰⁸ Still at times peaceful relations between Ḫatti and Assyria must have existed, as indicated by the famous letter sent by Ḫattušili III to Adad-Nirari I (?) concerning the delivery of iron blades to Assyria.¹⁰⁹

BABYLON

The role of Babylon as a centre of learning becomes clear by the fact that Hittite cuneiform writing is an adaptation from the Old Babylonian script.¹¹⁰ However, it is not entirely clear whether this was due to direct influence or was rather mediated through northern Syria.¹¹¹

The first direct encounter between Ḫatti and Babylon took place in the time of the Old Hittite kingdom, when Muršili I after the conquest of Ḫalab/Aleppo waged a daring campaign against Babylon, which he indeed managed to conquer.¹¹² While the Hittite conquest of Babylon in itself was short lived, it had the lasting effect that it brought the Kassite dynasty to power there.

Contacts between Babylon and Ḫatti were not re-established until the reign of Šuppiluliuma I, who married a daughter of the Kassite king Burnaburias II.¹¹³ From the reign of Ḫattušili III onwards Hittite kings tried desperately to establish good relations with Babylon, especially through dynastic marriages, very likely to force an alliance against the growing power of Aššur.¹¹⁴ This did

¹⁰⁶ Singer 1985, 100-19; Bryce 1998, 350-52; Klengel 1999, 295-96.

¹⁰⁷ Faist 2001, 218-20.

¹⁰⁸ Cancik-Kirschbaum 1996, 162-65; Klengel 2001, 268.

¹⁰⁹ Hagenbuchner 1989b, 267-69; Faist 2001, 22-25.

¹¹⁰ Klenger 1998.

¹¹¹ Beckman 1983, 100.

¹¹² Klengel 1979b, 83; 1999, 64-66; Bryce 1998, 103-05.

¹¹³ Klengel 1979b, 87; 1999, 200; Bryce 1998, 172-73.

¹¹⁴ Klengel 1979b, 87-89; 1999, 270-72; Bryce 1998, 292-94.

not always prove to be an easy task, as some Babylonian kings, such as Kadašman-Enlil II, had definite pro-Assyrian attitudes.¹¹⁵

Babylonians were present in the Hittite realm, as doctors, incantation priests and scribes are mentioned in several documents from Ḫattuša.¹¹⁶

A special material, called 'Babylon stone' in Hittite sources, probably denotes a kind of glass.¹¹⁷ In this context the recent discovery in Boğazköy of a small mould for manufacturing small figurines of deities is intriguing, as it bears hieroglyphic signs giving the name of 'Babylon'. As the figurines are clearly Hittite, not Babylonian, the inscription possibly refers to the material used for the figurines.¹¹⁸

Alişar Höyük produced a Kassite seal dating to *ca.* 1400 BC or slightly later.¹¹⁹ Several bronze daggers from Boğazköy have been compared with daggers from Kassite Babylonia.¹²⁰ It has to be pointed out, however, that daggers of this type have a rather large area of distribution, ranging from the southern Levant in the south to the Caucasus in the north.¹²¹

THE SOUTHERN LEVANT

As the southern Levant was under Egyptian domination during most of the Late Bronze Age, Ḫatti naturally had no direct relations to the rulers of Canaanite cities. The region, however, lay along the main communication route between Ḫatti and Egypt, thus it is no wonder that several Hittite objects were found there. The town of Megiddo is mentioned in a letter found at Boğazköy, most likely dating to the reign of Ḫattušili III in connection with Egyptian and Hittite envoys.¹²² It thus becomes clear that Megiddo was not the destination of the envoys, but that it was just a staging point on their journey.

The Hittite objects from the southern Levant are surprisingly numerous: at Megiddo an ivory plaque, probably part of a furniture or the lid of a small chest (Fig. 3),¹²³ as well as a biconvex seal made of steatite, mentioning Anu-Ziti, the charioteer have come to light.¹²⁴ A signet-ring made of bronze was found

¹¹⁵ Bryce 1998, 292.

¹¹⁶ Klengel 1979b, 88; Beckman 1983, 104-08; Bryce 2002, 170-73.

¹¹⁷ Klengel 1979, 89.

¹¹⁸ Seeher 2002, 77; Baykal-Seeher and Seeher 2003.

¹¹⁹ Gorny 1995, 165.

¹²⁰ Boehmer 1972, 41-43; Seeher 2004, 66.

¹²¹ Shalev 2004, 45; Genz 2006b, 247.

¹²² Singer 1988.

¹²³ Loud 1939, 10-11 and pl. 11; Alexander 1991.

¹²⁴ Singer 1995.

in a Late Bronze Age grave at Tel Nami (Fig. 4.2),¹²⁵ two similar rings made of silver were discovered in Tell el-Fara (S).¹²⁶ A fragmentary bulla of a princely seal came from the Egyptian residency at Tel Aphek (Fig. 4.6).¹²⁷ Unfortunately the name on the bulla cannot be reconstructed with certainty, but the appearance of the bulla as well as the find context make a dating to the 13th century, i.e. the period of intensive relations between Ḫattušili III and Ramesses II, very likely.

EGYPT

During the campaigns of Thutmose III in the Euphrates region Egyptian sources mention that he received tribute from a Hittite king, whose name unfortunately is not mentioned.¹²⁸ This should probably be seen in the light of the continuing conflict between the Hittites and Mitanni. Thutmose's success considerably weakened the kingdom of Mitanni, thus causing relief for the Hittites. Thus it seems quite understandable that the Hittites showed great interest in the Egyptian advance, and duly honoured Thutmose by sending presents.¹²⁹ It is probably only in the Egyptian interpretation that these presents were recorded as tribute.

The first depiction of Hittites in Egypt is found in the funerary temple of Amenophis III in Thebes among other 'subdued' foreign peoples, among them other Anatolian entities such as Isywa (Aššuwa?) and Arzawa.¹³⁰ Again the claim that the Hittites were subdued is completely unfounded and has to be seen in the context of Egyptian royal ideology.

Only during the expansion of Šuppiluliuma I into northern Syria did Ḫatti come into direct contact with Egypt.¹³¹ Šuppiluliuma himself campaigned in the 'land of Amka', probably to be identified with the region of the upper Orontes valley, clearly under Egyptian domination at that time.¹³² Šuppiluliuma was thus rightly astonished when he received news, while besieging Karkamiš, that an Egyptian queen, probably the widow of Tutankhamun, wanted to marry one of his sons (the so-called *daḫamunzu* episode). After several investigations

¹²⁵ Singer 1993.

¹²⁶ Boehmer and Güterbock 1987, 76; Singer 1993.

¹²⁷ Singer 1977.

¹²⁸ Klengel 2002, 38.

¹²⁹ Bittel 1983, 168; Redford 2003, 250-51.

¹³⁰ Sourouzzian and Stadelmann 2005, 81.

¹³¹ Klengel 2002, 42.

¹³² Klengel 1992, 350; 1999, 161; 2002, 42; Bryce 1998, 192-93.

Šuppiluliuma indeed sent his son Zannanza, but meanwhile conditions in Egypt had changed, and the son was probably murdered before even reaching Egypt.¹³³ Hittite – Egyptian relations remained tense during the following years, while both powers battled for supremacy in Amurru. The conflict reached its peak when Ramesses II in the fifth year of his reign (1275) marched to Syria with a large army. The Hittite king Muwatalli II met Ramesses at Qadeš, resulting in the well-known battle where Ramesses, despite his claims of victory, seems barely to have managed to rescue his army.¹³⁴

The hostile situation between Ḫatti and Egypt changed completely when Ḫattušili III usurped the Hittite throne. To stabilise his precarious position, Ḫattušili suggested concluding a peace treaty between Ḫatti and Egypt. After several negotiations, the treaty was sealed in the twenty-first year of Ramesses' reign (1259).¹³⁵ Relations even improved after Ramesses married a daughter of Ḫattušili in his thirty-fourth year (1246).¹³⁶ The preparations as well as the aftermath of the marriage led to a lively correspondence between the Egyptian and Hittite courts, in which the queens also took part. The letters were frequently accompanied by gifts, often vessels of precious metal, jewellery and fine garments are mentioned.¹³⁷ The dowry of the Hittite princess married to Ramesses on the other hand consisted of 500 Kaškan slaves as well as cattle.¹³⁸ From the textual sources it becomes clear that Egyptian medicine as well as medical personnel were highly valued in Ḫatti.¹³⁹

The intensity of Egyptian – Hittite contacts obviously declined after the death of Ḫattušili III and Ramesses II, but both countries still were on good terms. Thus Pharaoh Merneptah records the shipment of a large amount of grain to Ḫatti during a famine there.¹⁴⁰

These relations come to an end only with the collapse of the Hittite empire during the early years of the 12th century. The inscription of Ramesses III at Medinet Habu mentions Ḫatti among the countries destroyed by the Sea Peoples.¹⁴¹ Although this statement rather refers to the Hittite possessions in Cilicia and along the Syrian coast than to Central Anatolia,¹⁴² it still might

¹³³ van den Hout 1994; Bryce 1998, 193-99; Klengel 1999, 161-64; 2002, 43-47.

¹³⁴ Bryce 1998, 256-63; Klengel 1999, 214-17; 2002, 57-68. For events most likely directly following the battle, see also Dietrich 2001.

¹³⁵ Edel 1997; Bryce 1998, 304-09; Klengel 1999, 266-68; 2002, 78.

¹³⁶ Bittel 1986; Bryce 1998, 310-15; Klengel 2002, 121.

¹³⁷ Edel 1994; Klengel 2002, 104.

¹³⁸ Klengel 2002, 128-29.

¹³⁹ Edel 1976; Klengel 2002, 143-44.

¹⁴⁰ Klengel 1974, 167-68; 2002, 149-50; Bryce 1998, 365.

¹⁴¹ Edel 1985.

¹⁴² Genz forthcoming.

be taken as evidence that contacts between Hatti and Egypt existed up to the very end.

Despite the intensity of the relations between Hittites and Egyptians mirrored in the textual evidence, surprisingly few Egyptian artefacts have turned up in Central Anatolia so far, and the same is true for Hittite objects in Egypt. The earliest Egyptian object found so far in Central Anatolia is a fragment of an obsidian vessel from Boğazköy with the name of the Hyksos Pharaoh Chian (Fig. 2.2).¹⁴³ It is, however, highly unlikely that this object can be taken as evidence for direct contacts between Hatti and Egypt as early as the 17th century BC. It is much more likely that it came to Hattuša at a much later time as war booty from one of the Hittite campaigns in northern Syria.¹⁴⁴ An even older Egyptian statue dating to the 13th Dynasty was discovered at Kırıkkale, but unfortunately in a late antique burial,¹⁴⁵ thus it cannot be used for reconstructing the foreign relations of the Hittites.

The capital Hattuša produced a few Egyptian objects that might reflect the relations to Egypt as reported in the textual sources. A fragment of an Egyptian stele, dated to the reign of Ramesses II, was found on Büyükkale (Fig. 2.1),¹⁴⁶ as well as an Egyptian alabaster vase¹⁴⁷ and a lid.¹⁴⁸ From Temple 26 in the Upper City came an Egyptian axe.¹⁴⁹ A small sphinx of blue frit might be of Egyptian or Syro-Palestinian origin.¹⁵⁰ Other sites in Central Anatolia have even produced fewer Egyptian artefacts: a golden hair-ring¹⁵¹ as well as a bronze plaque showing a head in Egyptian style¹⁵² came from Ortaköy, and small amulets – either Egyptian or Egyptianising – were found at Alaca Höyük¹⁵³ and Alişar.¹⁵⁴

Several of these finds, such as the alabaster vase and the stele of Ramesses II from Hattuša as well as the golden hair-ring from Ortaköy may actually be interpreted as the sparse remnants of the Egyptian-Hittite gift exchange, and it surely is no coincidence that both of these sites served as royal residences.

¹⁴³ Stock 1963; Boehmer 1972, 211 and pl. LXXXII.2178

¹⁴⁴ Stock 1963, 76; Klengel 2002, 30-31.

¹⁴⁵ Bittel 1983, 162-63; de Vos 2002, 47.

¹⁴⁶ Boehmer 1972, 208 and Taf. LXXX.2159; de Vos 2002, 46.

¹⁴⁷ Boehmer 1972, 211 and Taf. LXXXII.2179; de Vos 2002, 46.

¹⁴⁸ Boehmer 1972, Taf. LXXXII.2175.

¹⁴⁹ Neve 1993, 29 and fig. 70; de Vos 2002, 46.

¹⁵⁰ Boehmer 1972, 179-80 and pl. LXV.1860; Cline 1991b, 134.

¹⁵¹ Süel 1998, 45-46 and fig. 23; de Vos 2002, 46.

¹⁵² Süel and Süel 2000, 323 and res. 6. According to A. Ahrens (personal communication, 22 June 2006) this piece is most likely to be the metal cover of a wooden statue.

¹⁵³ de Vos 2002, 46.

¹⁵⁴ de Vos 2002, 46.

The presence of Egyptian amulets on the other hand rather reflects the popularity of Egyptian magic-medicinal practices in Ḫatti.

Even fewer Hittite artefacts are recorded from Egypt. A small silver statue was found in Tell el-Amarna, dating to the 18th Dynasty (Fig. 5.2).¹⁵⁵ The city of Pi-Ramesse, the capital of Ramesses II, produced Hittite weapons as well as moulds for typical Hittite shields, thus indicating the presence of Hittite soldiers at the site.¹⁵⁶ The presence of Hittite military in Egypt makes sense only in the context of the Hittite princess arriving in Egypt to marry Ramesses II. The princess was very likely to have been accompanied by a Hittite guard of honour, which remained in her service after the marriage.¹⁵⁷ Recently a first fragment of a cuneiform tablet probably originating from Ḫatti was found at Pi Ramesse.¹⁵⁸

CYPRUS

Already in the ‘indictment of Madduwatta’, Arnuwanda I (early 14th century BC) claimed Alašiya, which nowadays is generally identified with the island of Cyprus, as belonging to the Hittite sphere of interest.¹⁵⁹ The actual conquest of the island, however, is reported only in the reign of Tuthaliya IV, possibly to secure maritime trade routes, especially for the shipment of grain from Egypt and Syria to Ḫatti.¹⁶⁰ A cuneiform tablet from Boğazköy with a list of tribute requested from Alašiya can probably be dated to the reign of Tuthaliya IV.¹⁶¹ Tuthaliya’s hold of the island seems not to have been long lasting, as his successor, Šuppiluliuma II, again is reported to have campaigned against the island, where he fought three sea battles and a succeeding land battle against the ‘enemies from Alašiya’.¹⁶² Šuppiluliuma’s campaign in particular has caused considerable controversy: it is entirely unclear whom he was fighting on the island. Was it just another subjugation of the island, or can this campaign already be related to the movements of the Sea Peoples?¹⁶³

Very few items of definite Hittite origin were discovered on the island of Cyprus. Among the objects to which a secure Hittite provenance can be

¹⁵⁵ Bell 1986.

¹⁵⁶ Pusch 1990, 103-04; 1991, 250-54; 1993, 139-40; Klengel 2002, 136-38.

¹⁵⁷ Pusch 1990, 108; 1993, 142; Klengel 2002, 136-39.

¹⁵⁸ Pusch and Jakob 2003.

¹⁵⁹ Güterbock 1967, 80; Bryce 1998, 146-47.

¹⁶⁰ Güterbock 1967, 74-77; Bryce 1998, 356-57.

¹⁶¹ Knapp 1980.

¹⁶² Güterbock 1967, 78; Bryce 1998, 365-66.

¹⁶³ Güterbock 1967, 80; Bryce 1998, 365-66; Singer 1985, 122; 2000, 27.

attributed are a golden stamp seal from Tamassos (Fig. 4.4), a small silver figurine from Kalavassos-Hagios Demetrios (Fig. 5.1), a bronze figurine with unknown find-spot and the head of a terracotta figurine from Tamassos.¹⁶⁴ A terracotta bull-head from the Hagia Paraskevi necropolis might also be regarded as being of Hittite origin.¹⁶⁵ On the other hand, a biconvex seal from Hala Sultan Tekke is obviously of local origin, betraying just Hittite influences,¹⁶⁶ and a silver ring from the same site seems to be of North Syrian rather than of Central Anatolian origin.¹⁶⁷ All these objects seem to date to the 13th century BC.

While objects of Cypriot origin are quite common along the southern and western coasts of Asia Minor,¹⁶⁸ Central Anatolia has so far produced very few Cypriot finds. At Maşat Höyük a Cypriot milk bowl was found,¹⁶⁹ and at Hattuşa and Alaca Höyük cylinder seals are tentatively identified as of Cypriot origin (Fig. 2.8).¹⁷⁰ Maşat Höyük also produced a gold funnel,¹⁷¹ which probably is the neck of an ostrich-egg vessel. Although parallels are known from various sites in Cyprus,¹⁷² a Near Eastern background of this object is more plausible.¹⁷³

OBJECTS WITHOUT SPECIFIC ORIGIN

Central Anatolia has produced a remarkable number of vessels of the Red Lustrous Wheel-Made Ware, especially spindle bottles and libation arms from such sites as Boğazköy, Maşat Höyük, Kuşaklı and many others.¹⁷⁴ The exact origin is still being debated; the most likely production areas for the time being are either in Cyprus or western Cilicia.¹⁷⁵

A fragment of an ox-hide ingot found at Boğazköy represents a type that is widespread in the eastern Mediterranean in the Late Bronze Age (Fig. 2.7).¹⁷⁶

¹⁶⁴ Kozal 2002, 653.

¹⁶⁵ Kozal 2002, 651.

¹⁶⁶ Kozal 2002, 651-52.

¹⁶⁷ Kozal 2002, 651-52.

¹⁶⁸ Todd 2001, 206-08; Kozal 2003, 69.

¹⁶⁹ Özgüç 1978, 66; Todd 2001, 210; Kozal 2003, 69.

¹⁷⁰ Boehmer and Güterbock 1987, 108-09.

¹⁷¹ Özgüç 1982, 115 and pl. 55.14.

¹⁷² Eriksson 1993, 131, 151-52; Todd 2001, 210.

¹⁷³ Caubet 1983. For ostrich-egg vessels in the Aegean, see Cline 1994, 237-39.

¹⁷⁴ Eriksson 1993, 129-34; Todd 2001, 210-11 (note that Todd has misplaced Kuşaklı on the map fig. 1: it should be further east, south of Sivas); Seeher 2002, 65; Kozal 2003, 65-66.

¹⁷⁵ Eriksson 1993, 149; Knappett 2000; Knappett *et al.* 2005; Mielke 2007.

¹⁷⁶ Müller-Karpe 1980, 303-04. For a general treatment of the ox-hide ingots, see Buchholz 1988.

Boğazköy has produced a number of oysters and other marine molluscs that were brought to the site from either the Mediterranean or the Black Sea.¹⁷⁷

SUMMARY

As one of the major powers in the Late Bronze Age Near East Ḫatti had frequent contacts with neighbouring regions in the eastern Mediterranean and the Near East. According to the textual evidence these contacts were military as well as diplomatic in nature. Military campaigns brought the Hittites into most regions of Anatolia, as well as into Syria and northern Mesopotamia, once even as far as Babylon. Hittite texts frequently mention that booty and captives were brought back from the campaigns to Ḫatti. Diplomatic contacts extended to the same regions, and involved not only the exchange of letters between the rulers,¹⁷⁸ but also of gifts¹⁷⁹ and even people such as religious, medical and craft specialists.¹⁸⁰ Both ways of contacts thus brought not just foreign goods and people to Ḫatti, but foreign knowledge too.

Trade activities, on the other hand, are rarely mentioned in Hittite texts. It has been suspected that Hittite texts of commercial nature were written on wooden tablets,¹⁸¹ which perished in the climatic conditions of the Anatolian highlands. Even though the archives discovered in Ḫattuša and elsewhere do not give the complete range of texts that were written in Ḫatti, references to trade activities or traders in the extensive written sources found so far¹⁸² are surprisingly scanty.¹⁸³ It is perhaps revealing that among the Hittite laws no commercial laws are known,¹⁸⁴ and also in other laws merchants are but rarely mentioned.¹⁸⁵ If merchants occur in Hittite texts, they are mostly non-Hittites, for example from Ura in Cilicia¹⁸⁶ or Ugarit in Syria.

The archaeological evidence of foreign objects in Central Anatolia equates well with the picture outlined above. Most of the foreign objects in the Hittite heartland would fall into categories one would expect as booty, tribute or

¹⁷⁷ von den Driesch and Boessneck 1981, 60; Seeher 2003, 9.

¹⁷⁸ See Hagenbuchner 1989a-b.

¹⁷⁹ See Cochavi-Rainey and Lilyquist 1999.

¹⁸⁰ On foreign craft specialists in Ḫattuša, see Bonatz 2002.

¹⁸¹ Beckman 2000, 20.

¹⁸² See van den Hout in this volume.

¹⁸³ Klengel 1979a; Hoffner 2001; Bryce 2002, 87-97.

¹⁸⁴ See Bryce in this volume.

¹⁸⁵ Haase 1978; Klengel 1979a; Hoffner 2001; Bryce 2002, 88.

¹⁸⁶ Haider 1995; Bryce 2002, 93-96.

diplomatic gifts.¹⁸⁷ As Anatolia is quite rich in natural resources of all kinds, trade surely was not a necessity to supply Ḫatti with indispensable raw materials such as metals or wood. In this respect the situation was completely different from Mesopotamia, which was dependent on the importation of metals of all kinds, and Egypt, which had to import wood. Only tin had to be imported to Anatolia and – very likely due to the unstable political conditions during the reigns of the last Hittite kings – grain had to be brought to Ḫatti from Egypt and Syria.

Hittite objects outside Central Anatolia are equally sparse, and again most of these objects either qualify as diplomatic gifts or, in the case of seals, point instead to the presence of Hittite emissaries or functionaries.¹⁸⁸ Compared with the distribution of Mycenaean pottery or Egyptian objects in the eastern Mediterranean during the Late Bronze Age, the quantity of Hittite objects is negligible.

It has to be borne in mind that the summary of the evidence of Hittite foreign contacts given above is by no means complete. In the archaeological record, a number of items that are frequently mentioned in the texts, such as textiles and agricultural products, do not survive due to their perishable nature. Other objects that feature prominently in the Late Bronze Age gift exchange, such as items made of precious metals, also had little chance to become part of the archaeological record. On the other hand, the written records are certainly incomplete. Texts relating to trade may have been written on wooden tablets, as mentioned above, or alternatively these documents may have been part of private archives, none of which has been discovered in Central Anatolia so far.

However, even if taking all these uncertainties into consideration, one is left with the impression that trade did not play a prominent role in Hittite society and economy.¹⁸⁹ Foreign objects mainly seem to have reached Ḫatti as booty, tribute or diplomatic gifts, but obviously not by ordinary trade.¹⁹⁰

¹⁸⁷ Only the Red Lustrous Wheel-Made Ware might be taken as a case for commodities – probably scented oil or some other valuable liquid – being distributed via a commercial network of some kind.

¹⁸⁸ On Hittite functionaries in Syria, see Imparati 1987.

¹⁸⁹ Beckman 1999, 166.

¹⁹⁰ Imparati 1987, 188; Beckman 1999, 166-67.

BIBLIOGRAPHY

- Akdeniz, E. 2004: 'Kuşadası Kadıkalesi Kazısında Bir Hitit Heykelciği'. *Olba* 9, 21-56.
- Alexander, R.L. 1991: 'Šaušga and the Hittite Ivory from Megiddo'. *JNES* 50, 161-82.
- Archi, A. 1980a: 'Materiale Epigrafico Ittita da Tell Fray'. *SMEA* 22, 31-32.
- 1980b: 'Impronte di un Sigillo Geroglifico Ittita da Ebla'. *SMEA* 22, 33.
- 1993: 'A Seal Impression from el-Qitar / Til Abnu (Syria)'. *AS* 43, 203-06.
- 1998: 'A Biconvex Seal from Tell Afis'. In Cechini, S.M. and Mazzoni, S. (eds.), *Tell Afis (Siria). Scavi sull'acropoli 1988–1992/The 1988–1992 Excavations on the Acropolis* (Pisa), 367–69.
- Baykal-Seeher, A. and Seeher, J. 2003: 'Götterbilder aus Babylonstein? Eine hethitische Gußform aus Boğazköy-Ḫattuša'. *IstMitt* 53, 99-111.
- Beckman, G. 1983: 'Mesopotamians and Mesopotamian Learning at Hattusha'. *JCS* 35, 97-114.
- 1992: 'Hittite Administration in Syria in the Light of the Texts from Hattuša, Ugarit and Emar'. In Chavalas, M.W. and Hayes, J.L. (eds.), *New Horizons in the Study of Ancient Syria* (Bibliotheca Mesopotamica 25) (Malibu), 41-49.
- 1995: 'Hittite Provincial Administration in Anatolia and Syria: the View from Maşat and Emar'. In Carruba, O., Giorgieri, M. and Mora, C. (eds.), *Atti del II Congresso Internazionale di Hittitologia* (Studia Mediterranea 9) (Pavia), 19-37.
- 1996: 'Emar and its Archives'. In Chavalas, M.W. (ed.), *Emar: the History, Religion and Culture of a Syrian Town in the Late Bronze Age* (Bethesda, MD), 1-12.
- 1999: 'The City and the Country in Hatti'. In Klengel, H. and Renger, J. (eds.), *Landwirtschaft im Alten Orient* (Berliner Beiträge zum Vorderen Orient 18) (Berlin), 161-69.
- 2000: 'Hittite Chronology'. *Akkadica* 119-120 (= *Just in Time* [Proceedings of the International Colloquium on Ancient Near Eastern Chronology, 2nd Millennium BC, Ghent 7-9 July 2000]), 19-32.
- Bell, M.R. 1986: 'A Hittite Pendant from Amarna'. *AJA* 90, 143-51.
- Beyer, D. 2001: *Emar IV. Les sceaux* (Orbis Biblicus et Orientalis 20, Series Archaeologica) (Fribourg/Göttingen).
- Bittel, K. 1976: 'Tonschale mit Ritzzeichnung von Boğazköy'. *RA*, 9-14.
- 1983: *Hattuscha. Hauptstadt der Hethiter. Geschichte und Kultur einer altorientalischen Großmacht* (Cologne).
- 1986: 'Bildliche Darstellungen Hattušili's III. in Ägypten'. In Hoffner, H.A. and Beckman, G.M. (eds.), *Kaniššuar. A Tribute to Hans G. Güterbock on his Seventy-Fifth Birthday May 27, 1983* (Assyriological Studies 23) (Chicago), 39-48.
- Boardman, J. 1966: 'Hittite and Related Hieroglyphic Seals from Greece'. *Kadmos* 5, 47-48.
- Boehmer, R.M. 1972: *Die Kleinfunde von Boğazköy* (Boğazköy-Ḫattuša VII) (Berlin).
- Boehmer, R.M. and Güterbock, H.G. 1987: *Glyptik aus dem Stadtgebiet von Boğazköy* (Boğazköy-Ḫattuša XIV) (Berlin).
- Bonatz, D. 2002: 'Fremde "Künstler" in Ḫattuša. Zur Rolle des Individuums beim Austausch materieller Kultur in der Späten Bronzezeit'. In Blum, H. Faist, B., Pfälzner, P. and Wittke, A.-M. (eds.), *Brückenland Anatolien? Ursachen, Extensität und Modi des Kulturaustausches zwischen Anatolien und seinen Nachbarn* (Tübingen), 69-83.

- Bounni, A., Lagarce, É. And Lagarce, J. 1998: *Ras Ibn Hani I. Le palais nord du bronze récent. Fouilles 1979–1995, Synthèse préliminaire* (Beirut).
- Bryce, T.R. 1989a: 'The Nature of Mycenaean Involvement in Western Anatolia'. *Historia* 38, 1-21.
- 1989b: 'Ahhiyawans and Mycenaeans – An Anatolian Viewpoint'. *OJA* 8, 297-310.
- 1998: *The Kingdom of the Hittites* (Oxford).
- 1999: 'Anatolian Scribes in Mycenaean Greece'. *Historia* 48, 257-64.
- 2002: *Life and Society in the Hittite World* (Oxford).
- 2003: 'Relations between Hatti and Ahhiyawa in the Last Decades of the Bronze Age'. In Beckman, G., Beal, R. and McMahon, G. (eds.), *Hittite Studies in Honor of Harry A. Hoffner Jr. on the Occasion of his 65th Birthday* (Winona Lake, IN), 59-72.
- Buchholz, H.-G. 1988: 'Der Metallhandel des zweiten Jahrtausends im Mittelmeerraum'. In Heltzer, M. and Lipinski, E. (eds.), *Society and Economy in the Eastern Mediterranean (c. 1500-1000 B.C.)* (Proceedings of the International Symposium held at the University of Haifa from the 28th of April to the 2nd of May 1985) (*Orientalia Lovaniensia Analecta* 23) (Leuven), 187-228.
- Cancik-Kirschbaum, E. C. 1996: *Die mittellassyrischen Briefe aus Tall šēḫ Ḥamad*. (Berichte der Ausgrabung Tall šēḫ Ḥamad/Dūr Katlimmu 4.1) (Berlin).
- Caubet, A. 1982: 'La céramique'. In Beyer, D. (ed.), *Meskéné – Emar. Dix ans de travaux 1972–1982* (Paris), 71-86.
- 1983: 'Les œufs d'autruche au Proche Orient Ancien'. *RDAC* 1983, 193-98.
- Cline, E.H. 1991a: 'A Possible Hittite Embargo against the Mycenaeans'. *Historia* 40, 1-9.
- 1991b: 'Hittite Objects in the Bronze Age Aegean'. *AS* 41, 133-43.
- 1994: *Sailing the Wine-Dark Sea. International Trade and the Late Bronze Aegean*. (*BAR International Series* 591) (Oxford).
- 1996: 'Aššuwā and the Achaeans: the Mycenaean Sword at Hattušas and its possible Implications'. *BSA* 91, 137-51.
- Cochavi-Rainey, C. and Lilyquist, C. 1999: *Royal Gifts in the Late Bronze Age. Fourteenth to Thirteenth Centuries B.C.E. Selected Texts Recording Gifts to Royal Personages* (Beer-Sheva 13) (Beer-Sheva).
- Darga, M. 2004: 'Şarhöyük-Dorylaion (Eskişehir) Kazılarında Hitit Buluntarı'. In Korkut, T. (ed.), *Anadolu'da Doğdu. 60 Yaşında Fahri Işık'a Armağan/ Festschrift für Fahri Işık zum 60. Geburtstag* (Istanbul), 269-83.
- Darga, M. and Starke, F. 2003: 'Eine Tonbulle mit Hieroglyphen-Luwischem Siegelabdruck aus Şarhöyük-Dorylaion'. *Studia Troica* 13, 161-64.
- de Vos, J. 2002: 'À propos des Aegyptiaca d'Asie Mineure dates du II^e millénaire av. J.-C.'. *Hethitica* 15, 43-63.
- Dietrich, M. 2001: 'Der Brief des Kommandeurs šumiyānu an den ugaritischen König Niqmepa' (S 20.33). Ein Bericht über Aktivitäten nach der Schlacht bei Qadeš 1275 v. Chr.'. *UF* 33, 117-91.
- Edel, E. 1976: *Ägyptische Ärzte und ägyptische Medizin am hethitischen Königshof* (Göttingen).
- 1985: 'Der Seevölkerbericht aus dem 8. Jahre Ramses III'. In *Mélanges G. E. Mokhtar* (Cairo), 223-37.
- 1994: *Die ägyptisch-hethitische Korrespondenz aus Boghazköi* (Abhandlungen der Rheinisch-Westfälischen Akademie der Wissenschaften 77), 2 vols. (Opladen).

- 1997: *Der Vertrag von Ramses II. von Ägypten und Hattušili III. von Hatti* (Berlin).
- Eriksson, K.O. 1993: *Red Lustrous Wheel-made Ware (SIMA 103)* (Jonsered).
- Faist, B.I. 2001: *Der Fernhandel des assyrischen Reiches zwischen dem 14. und dem 11. Jh. v. Chr.* (Alter Orient und Altes Testament 265) (Neukirchen-Vluyn/Kevelaer).
- 2002: 'Die Rechtsordnung in Syrien nach der hethitischen Eroberung: Wandel und Kontinuität'. In Blum, H., Faist, B., Pfälzner, P. and Wittke, A.-M. (eds.), *Brückenland Anatolien? Ursachen, Extensität und Modi des Kulturaustausches zwischen Anatolien und seinen Nachbarn* (Tübingen), 129-46.
- Freu, J. 2001: 'De l'indépendance à l'annexion. Le Kizzuwatna et le Hatti aux XVI^e et XV^e siècles avant notre ère'. In Jean *et al.* 2001, 13-36.
- Garstang, J. 1953: *Prehistoric Mersin. Yümük Tepe in Southern Turkey* (Oxford).
- Gates, M.H. 2001: 'Potmarks at Kinet Höyük and the Hittite Ceramic Industry'. In Jean *et al.* 2001, 137-57.
- Genz, H. 2004: 'Eine mykenische Scherbe aus Boğazköy'. AA 2004.1, 77-84.
- 2006a: 'Hethitische Präsenz im spätbronzezeitlichen Syrien: Die archäologische Evidenz'. *BaghdMitt* 37, 499-509.
- 2006b: Review of S. Shalev, *Swords and Daggers in Late Bronze Age Canaan* (Prähistorische Bronzefunde IV.13) (Stuttgart 2004). *PZ* 81.2, 246-48.
- forthcoming: 'No land could stand before their arms, from Hatti on ...'? New Light on the End of the Hittite Empire and the Early Iron Age in Central Anatolia'. In Killebrew, A. and Lehmann, G. (eds.), *The Philistines and other 'Sea Peoples'* (Proceedings of the International Round Table, May 2001).
- Geiger, A. 1993: 'Ein Schwertheft aus dem Tempelviertel der Oberstadt von Boğazköy-Hattuša'. *IstMitt* 43, 213-17.
- Goldman, H. 1956: *Excavations at Gözli Kule, Tarsus 2. From the Neolithic through the Bronze Age* (Princeton).
- Gorny, R.L. 1993: 'The Biconvex Seals of Alişar Höyük'. AS 43, 163-91.
- 1995: 'Alişar Höyük in the Late Second Millennium B.C.'. In Carruba, O., Giorgieri, M. and Mora, C. (eds.), *Atti del II Congresso internazionale di Hittitologia* (Studia Mediterranea 9) (Pavia), 159-71.
- Güterbock, H.G. 1967: 'The Hittite Conquest of Cyprus Reconsidered'. *JNES* 26, 73-81.
- Haase, R. 1978: 'Zur Tötung eines Kaufmanns nach den hethitischen Gesetzen (§§85 und III)'. *Welt des Orients* 9, 213-19.
- Hagenbuchner, A. 1989a: *Die Korrespondenz der Hethiter 1. Teil. Die Briefe unter ihren kulturellen, sprachlichen und thematischen Gesichtspunkten* (THeth 15) (Heidelberg).
- 1989b: *Die Korrespondenz der Hethiter 2. Teil. Die Briefe mit Transkription, Übersetzung und Kommentar* (THeth 15) (Heidelberg).
- Haider, P.W. 1995: 'Ura – eine hethitische Handelsstadt'. *Münstersche Beiträge zur antiken Handelsgeschichte* 14, 70-107.
- Hawkins, J.D. 1998: 'Tarkasnawa King of Mira: "Tarkondemos", Boğazköy Sealings and Karabel'. AS 48, 1-31.
- Hawkins, J.D. and Easton, D.F. 1996: 'A Hieroglyphic Seal from Troia'. *Studia Troica* 6, 111-18.
- Heinhold-Krahmer, S. 1977: *Arzawa. Untersuchungen zu seiner Geschichte nach den hethitischen Quellen* (THeth 8) (Heidelberg).
- Herscher, E. 1995: 'Archaeology in Cyprus'. *AJA* 99, 257-94.

- Hoffner, H.A. 2001: 'Some Thoughts on Merchants and Trade in the Hittite Kingdom'. In Richter, T., Prechel, D. and Klinger, J. (eds.), *Kulturgeschichten. Altorientalische Studien für Volkert Haas zum 65. Geburtstag* (Saarbrücken), 179-89.
- Imparati, F. 1987: 'La politique extérieure des Hittites: tendances et problèmes'. *Hethitica* 8, 187-207.
- Jean, É., Dinçol, A.M., and Durugönül, S. (eds.) 2001: *La Cilicie: espaces et pouvoirs locaux (2^e millénaire av. J.-C. – 4^e siècle ap. J.-C.)* (Actes de la table ronde internationale d'Istanbul, 2-5 novembre 1999)/ *Kilikia: mekânlar ve yerel güçler (M.Ö. 2. binyıl-M.S. 4. yüzyıl)* (Uluslararası yuvarlak masa toplantısı bildirileri, İstanbul, 2-5 Kasım 1999) (Paris/Istanbul).
- Klengel, H. 1974: "'Hungerjahre" in Hatti'. *AoF* 1, 165-74.
- 1979a: 'Handel und Kaufleute im hethitischen Reich'. *AoF* 6, 165-74.
- 1979b: 'Die Hethiter und Babylonien'. *Archiv Orientalní* 47, 83-90.
- 1992: 'Die Hethiter und Syrien: Aspekte einer politischen Auseinandersetzung'. In Otten, H., Akurgal, E., Ertem, H. and Süel, A. (eds.), *Hittite and other Anatolian and Near Eastern Studies in Honour of Sedat Alp* (Ankara), 341-53.
- 1999: *Geschichte des hethitischen Reiches (HdO Abteilung 1.34)* (Leiden/Boston/Cologne).
- 2001: 'Einige Bemerkungen zur hethitischen Herrschaftsordnung in Syrien'. In Wilhelm, G. (ed.), *Akten des IV. Internationalen Kongresses für Hethitologie Würzburg, 4.-8. Oktober 1999 (StBoT 45)* (Wiesbaden), 255-71.
- 2002: *Hattuschili und Ramses: Hethiter und Ägypter – ihr langer Weg zum Frieden* (Mainz).
- Klinger, J. 1998: "'Wer lehrte die Hethiter das Schreiben?" Zur Paläographie früher Texte in akkadischer Sprache aus Boğazköy: Skizze einiger Überlegungen und vorläufiger Ergebnisse'. In Alp, S. and Süel, A. (eds.), *III. Uluslararası Hititoloji Kongresi Bildirileri, Çorum, 16-22 Eylül 1996/Acts of the IIIrd International Congress of Hittitology, Çorum, September 16-22, 1996* (Ankara), 365-75.
- Knapp, A.B. 1980: 'KBo I 26: Alasiya and Hatti'. *JCS* 32, 43-47.
- Knappett, C. 2000: 'The provenance of Red Lustrous Wheel-made Ware: Cyprus, Syria, or Anatolia?'. *Internet Archaeology* 9 [http://intarch.ac.uk/journal/issue9/knappett_toc.html]
- Knappett, C., Kilikoglou, V., Steele, V. and Stern, B. 2005: 'The Circulation and Consumption of Red Lustrous Wheelmade Ware: Petrographic, Chemical and Residue Analysis'. *AS* 55, 25-59.
- Koehl, R.B. 1995: 'The Silver Stag "Bibru" from Mycenae'. In Carter, J.B. and Morris, S.P. (eds.), *The Ages of Homer. A Tribute to Emily Townsend Vermeule* (Austin, TX), 61-66.
- Kohlmeyer, K. 2000: *Der Tempel des Wettergottes von Aleppo* (Münster).
- Kozal, E. 2002: 'Hethitische und hethitisch beeinflusste Objekte aus Zypern'. In Aslan, R., Blum, S., Kastl, G., Schweizer, F. and Thumm, D. (eds.), *Mauerschau. Festschrift für Manfred Korfmann*, vol. 2 (Remshalden-Grünbach), 651-61.
- 2003: 'Analysis of the Distribution Patterns of Red Lustrous Wheel-Made Ware Mycenaean and Cypriote Pottery in Anatolia in the 15th-13th centuries B.C.'. In Fischer, B., Genz, H., Jean, E. and Köroğlu, K. (eds.), *Identifying Changes: The Transition from Bronze to Iron Ages in Anatolia and its Neighbouring Regions*. (Proceedings of the International Workshop Istanbul, November 8-9, 2002) (Istanbul), 65-77.

- Laroche, E. 1982: 'Documents Hittites et Hourites'. In Beyer, D. (ed.), *Meskéné – Emar. Dix ans de travaux 1972-1982* (Paris), 53-60.
- Loud, G. 1939: *The Megiddo Ivories* (Oriental Institute Publications 52) (Chicago).
- Margueron, J.-C. 1979: 'Un Hilani à Emar'. *AASOR* 44, 153-76.
- 1982: 'Aux marches de l'Empire Hittite: une campagne de fouilles à Tell Faq'ous (Syrie), citadelle du pays d'Astata'. In Yon, M. (ed.), *La Syrie au Bronze Récent* (Paris), 47-66.
- 1995: 'Emar. Capital of Aštata in the Fourteenth Century BCE'. *Biblical Archaeologist* 58, 126-38.
- Matthiae, P. 1980: 'Ititi ed Assiri a Tell Fray: Lo Scavo di una Città Medio-Siriana sull'Eufrate'. *SMEA* 22, 35-51.
- Mazzoni, S. 2002: 'Late Bronze Age Pottery Production in Northwestern Central Syria'. In Al-Maqdissi, A., Matoïan, V. and Nicolle, C. (eds.), *Céramique de l'âge du Bronze en Syrie I. La Syrie du Sud et la vallée de l'Oronte* (Beirut), 129-42.
- Mee, C. 1978: 'Aegean Settlement and Trade in Anatolia in the Second Millennium BC'. *AS* 28, 121-156.
- 1998: 'Anatolia and the Aegean in the Late Bronze Age'. In Cline, E.H. and Harris-Cline, D. (eds.), *The Aegean and the Orient in the Second Millennium* (Aegaeum 18) (Liège), 137-46.
- Mellink, M.J. 1964: 'A Hittite Figurine from Nuzi'. In Bittel, K., Heinrich, E., Hrouda, B. and Nagel, W. (eds.), *Vorderasiatische Archäologie. Studien und Aufsätze Anton Moortgat zum fünfundsechzigsten Geburtstag gewidmet von Kollegen, Schülern und Freunden* (Berlin), 155-64.
- Mellink, M.J. and Strahan, D. 1998: 'The Bronze Figurine from Troia Level VIIa'. *Studia Troica* 8, 141-49.
- Mielke, D.P. 2004a: 'Die Stadttore von Kuşaklı-Sarissa'. *Alter Orient aktuell* 5, 23-27.
- 2004b: 'Die Ausgrabung des Nordwest-Tores'. In Müller-Karpe, A. 'Untersuchungen in Kuşaklı 2003'. *MDOG* 136, 146-57.
- 2007: 'Red Lustrous Wheelmade Ware from Hittite Contexts'. In Hein, I. (ed.), *The Lustrous Wares of Late Bronze Age Cyprus and the Eastern Mediterranean* (Papers of a Conference, Vienna, 5th-6th of November 2004) (Contributions to the Chronology of the Eastern Mediterranean 13) (Vienna), 155-68.
- Mountjoy, P.A. 1998: 'The East Aegean – West Anatolian Interface in the Late Bronze Age: Mycenaeans and the Kingdom of Ahhiyawa'. *AS* 48, 33-67.
- Müller-Karpe, A. 1980: 'Die Funde'. *AA*, 303-07.
- 1994: 'Anatolische Bronzeschwerter und Südosteuropa'. In *Festschrift für Otto-Hermann Frey zum 65. Geburtstag* (Marburger Studien zur Vor- und Frühgeschichte 16) (Marburg), 431-44.
- Müller-Karpe, H. 1980: *Handbuch der Vorgeschichte*, vol. 4, pt 3 (Munich).
- Neu, E. 1995: 'Hethiter und Hethitisch in Ugarit'. In Dietrich, M. and Loretz, O. (eds.), *Ugarit. Ein ostmediterranes Kulturzentrum im Alten Orient* (Münster), 115-129.
- Neve, P. 1993: *Hattuša. Stadt der Götter und Tempel* (Mainz).
- Niedorf, C.F. 2002: 'Ein hethitisches Brieffragment aus Alalah'. In Loretz, O., Metzler, K.A. and Schaudig, H. (eds.), *Ex Mesopotamia et Syria Lux: Festschrift für Manfred Dietrich zu seinem 65. Geburtstag* (Alter Orient und Altes Testament 281) (Münster), 517-26.

- Niemeier, W.-D. 1998: 'The Mycenaeans in Western Anatolia and the Problem of the Origin of the Sea Peoples'. In Gitin, S., Mazar, A. and Stern, E. (eds.), *Mediterranean Peoples in Transition. Thirteenth to Early Tenth Centuries BCE. In Honor of Professor Trude Dothan* (Jerusalem), 17-65.
- 1999: 'Mycenaeans and Hittites in War in Western Asia Minor'. In Laffineur, R. (ed.), *Polemos. Le contexte guerrier en Égée à l'Âge du Bronze* (Aegaeum 19) (Liège), 141-55.
- 2002: 'Ḫattusa und Aḫḫiyawa im Konflikt um Millawanda'. In *Die Hethiter und ihr Reich. Das Volk der 1000 Götter* (Bonn), 294-99.
- Özgüç, T. 1978: *Maşat Höyük kazıları ve çevresindeki araştırmaları/Excavations at Maşat Höyük and Investigations in its Vicinity* (TTKY V.38) (Ankara).
- 1982: *Maşat Höyük II. Boğazköy'ün kuzeydoğusunda bir Hitit merkezli/A Hittite Center Northeast of Boğazköy* (TTKY V.38a) (Ankara).
- Özgünel, C. 1996: *Die mykenische Keramik in Anatolien* (Asia Minor Studien 23) (Bonn).
- Peschlow-Bindokat, A. 2001: 'Eine hethitische Großprinzeninschrift aus dem Latmos'. AA, 363-78.
- Porada, E. 1981: 'The Cylinder Seals found at Thebes in Boeotia'. *AfO* 28, 1-70.
- Pusch, E.B. 1990: 'Metallverarbeitende Werkstätten der frühen Ramessidenzeit in Qantir-Piramesse/Nord – ein Zwischenbericht'. *Ägypten und Levante* 1, 75-113.
- 1991: 'Ausländisches Kulturgut in Qantir-Piramesse'. In Schoske, S. (ed.), *Akten des vierten internationalen Ägyptologen Kongresses München 1985* (Hamburg), 249-56.
- 1993: "'Pi-Ramesse-geliebt-von-Amun, Hauptquartier Deiner Streitwagentruppen". Ägypter und Hethiter in der Delta-Residenz der Ramessiden'. In Eggebrecht, A. (ed.), *Pelizaeus-Museum Hildesheim. Die ägyptische Sammlung* (Antike Welt Sondernummer 1993) (Mainz), 126-43.
- Pusch, E.B. and Jakob, S. 2003: 'Der Zipfel des diplomatischen Archivs Ramses' II'. *Ägypten und Levante* 13, 143-53.
- Redford, D.B. 2003: *The Wars in Syria and Palestine of Thutmose III* (Culture and History of the Ancient Near East 16) (Leiden/Boston).
- Richter, T. 2002: 'Der "Einjährige Feldzug" Šuppiluliumas I. von Ḫatti in Syrien nach den Textfunden des Jahres 2002 in Mišrife/Qatna'. *UF* 34, 603-18.
- Riis, P.J. 1948: *Hama II.3: Les cimetières à cremation* (Copenhagen).
- Salvini, M. and Trémouille, M.-C. 2003: 'Les texts Hittites de Meskéné/Emar'. *SMEA* 45, 225-71.
- Schachner, A. and Meriç, R. 2000: 'Ein Stempelsiegel des späten 2. Jahrtausends v. Chr. aus Metropolis in Ionien'. *SMEA* 42, 85-102.
- Schaeffer, C.F.A. 1956: 'Matériaux pour l'étude des relations entre Ugarit et le Hatti'. In Schaeffer, C.F.A., *Ugaritica III: Sceaux et cylindres hittites, épée gravée du cartouche de Mineptah, tablettes chyro-minoennes et autres découvertes nouvelles de Ras Shamra* (Mission de Ras Shamra 8/ Bibliothèque archéologique et historique 64) (Paris), 1-96.
- Seeden, H. 1980: *The Standing Armed Figurines in the Levant* (Prähistorische Bronzefunde I.1) (Munich).
- Seeher, J. 2002: 'Die Ausgrabungen in Boğazköy-Ḫattuša 2001'. AA, 59-78.
- 2003: 'Die Ausgrabungen in Boğazköy-Ḫattuša 2002'. AA, 1-24.
- 2004: 'Die Ausgrabungen in Boğazköy-Ḫattuša 2003'. AA, 59-76.

- Seidl, U. 1972: 'Lapisreliefs und ihre Goldfassungen aus Karkamiš'. *IstMitt* 22, 15-43.
- Shalev, S. 2004: *Swords and Daggers in Late Bronze Age Canaan* (Prähistorische Bronzefunde IV.13) (Stuttgart).
- Singer, I. 1977: 'A Hittite Hieroglyphic Seal Impression from Tel Aphek'. *Tel Aviv* 4, 178-90.
- 1985: 'The Battle of Nihriya and the End of the Hittite Empire'. *ZAss* 75, 100-23.
- 1988: 'Megiddo mentioned in a Letter from Boğazköy'. In Neu, E. and Rüster, C. (eds.), *Documentum Asiae Minoris Antiquae. Festschrift Heinrich Otten* (Wiesbaden), 327-32.
- 1992: 'Hittite Cultural Influence in the Kingdom of Amurru'. In Charpin, D. and Joannès, F. (eds.), *La circulation des biens, des personnes et des idées dans le Proche-Orient ancien* (Actes de la XXXVIIIe rencontre Assyriologique internationale, Paris, 8-10 juillet, 1991) (Paris), 231-34.
- 1993: 'A Hittite Signet Ring from Tel Nami'. In Rainey, A. (ed.), *kinattûtu ša dārâti. Raphael Kutscher Memorial Volume* (Tel Aviv), 189-93.
- 1995: 'A Hittite Seal from Megiddo'. *Biblical Archaeologist* 58, 91-93.
- 1999: 'A Political History of Ugarit'. In Watson, W.G.E. and Wyatt, N. (eds.), *Handbook of Ugaritic Studies (HdO Abteilung 1.39)* (Leiden/Boston/Cologne), 603-733.
- 2000: 'New Evidence on the End of the Hittite Empire'. In Oren, E.D. (ed.), *The Sea Peoples and their World: A Reassessment* (University of Pennsylvania, University Museum Monograph 108/ University Museum Symposium Series 11) (Philadelphia), 21-33.
- Sipahi, T. 2001: 'New Evidence from Anatolia regarding Bull-Leaping Scenes in the Art of the Aegean and the Near East'. *Anatolica* 27, 107-15.
- Sourouzzian, H. and Stadelmann, R. 2005: 'Die ältesten Erwähnungen von Ioniern und Danaern. Neueste Ausgrabungen im Totentempel Amenophis' III. in Theben enthüllen kolossale Statuen und Sockel mit Darstellungen fremder Völker'. *AntWelt* 36.6, 79-83.
- Starke, F. 1995: *Ausbildung und Training von Streitwagenpferden, eine hippologisch orientierte Interpretation des Kikkuli-Textes (StBoT 41)* (Wiesbaden).
- 1997: 'Troia im Kontext des historisch-politischen Umfeldes Kleinasien im 2. Jahrtausend'. *Studia Troica* 7, 447-87.
- 2001: 'Ein silbernes, bikonvexes Siegel mit luwischer Hieroglyphenschrift'. In Finkbeiner, U., 'Emar 1999 – Bericht über die 3. Kampagne der syrisch-deutschen Ausgrabungen'. *BaghdMitt* 32, 103-05.
- 2003: 'Stempelsiegel mit luwischer Inschrift'. In Finkbeiner, U. and Sakal, F., 'Emar 2002 – Bericht über die 5. Kampagne der syrisch-deutschen Ausgrabungen'. *BaghdMitt* 34, 91-92.
- Stock, H. 1963: 'Der Hyksos Chian in Boğazköy'. *MDOG* 94, 73-80.
- Süel, A. 1998: 'Ortaköy-Şapinuwa: Bir Hitit Merkezi'. *TÜBA-AR* I, 37-61.
- Süel, A. and Süel, M. 2000: '1998 yılı Ortaköy-Şapinuwa kazı çalışmaları'. *KST* 21, 321-26.
- Symington, D. 2001: 'Hittites at Kilise Tepe'. In Jean *et al.* 2001, 167-84.
- Todd, I.A. 2001: 'Early Connections of Cyprus with Anatolia'. In Karageorghis, V. (ed.), *The White Slip Ware of Late Bronze Age Cyprus* (Vienna), 203-13.
- Ünal, A. 1998: *Hittite and Hurrian Cuneiform Tablets from Ortaköy (Çorum), Central Turkey* (Istanbul).

- van den Hout, T.P.J. 1994: 'Der Falke und das Kücken: der neue Pharao und der hethitische Prinz'. *ZAss* 84, 60-88.
- Venturi, F. 1998: 'The Late Bronze II and Early Iron I Levels'. In Cechini, S.M. and Mazzoni, S. (eds.), *Tell Afis (Siria). Scavi sull'acropoli 1988-1992/The 1988-1992 Excavations on the Acropolis* (Pisa), 123-62.
- von den Driesch, A. and Boessneck, J. 1981: *Reste von Haus- und Jagdtieren aus der Unterstadt von Boğazköy-Hattuša* (Boğazköy-Hattuša XI) (Berlin).
- Wilhelm, G. 1982: *Grundzüge der Geschichte und Kultur der Hurriter* (Darmstadt).
- Woolley, C.L. 1955: *Alalakh. An Account of the Excavations at Tell Atchana in the Hatay, 1937-1949* (Oxford).
- Yon, M. 1997: *La cité d'Ougarit sur le Tell de Ras Shamra* (Guides Archéologiques de l'Institut Français d'Archéologie du Proche-Orient 2) (Paris).
- Yoshida, D. and Kammenhuber, A. 1995: 'Hurriter und Hethiter. Mit besonderer Berücksichtigung der Beziehungen zwischen Hatti und Kizzuwatna'. In H.I.H. Prince Takihito Mikasa (ed.), *Essays on Ancient Anatolia and its Surrounding Civilizations* (*BMECCJ* 8) (Wiesbaden), 201-12.

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INDEX

Abu Simbel 41-2, 132, 137
 Adad-Nirari I 39, 314, 315
 administration (see also archives) 33, 44,
 48, 59, 63-4, 66, 70, 75-9, 89-91, 126,
 144, 155, 161, 169-70, 176, 178, 185-6,
 277, 279
 Aegean 37, 68, 259, 263, 292, 303-5, 309,
 321
 Afis, Tell 312
 Aḥḥiya 37
 Aḥḥiyawa 37, 42, 127, 303
 Aja 39
 Akkadian 2, 32, 41, 47-9, 61-2, 64, 126,
 145
 Akpınar 226-7, 236
 Alaca Höyük 4-5, 57-8, 68-9, 86, 110, 118,
 155, 157, 163, 165, 174, 176, 179, 181-3,
 204, 286, 296, 302, 305, 313, 319, 321
 Alakšandu 40
 Alalah 13, 57, 58, 302, 310, 312-3
 Alašiya 43, 277-9, 320
 Aleppo/Ḥalab 33-5, 58, 66, 68, 89, 94, 96,
 302, 313, 315
 Ališar 4, 6-7, 11, 155, 174, 182-3, 302, 316,
 319
 Alluwamna 15
 Amarna, Tell el- 34, 37, 57, 302, 308, 320
 Ammuna 15
 Amurru 38-40, 43, 277, 311, 315, 318
 Anitta 32, 48, 113, 125, 145, 292
 annals (see also archives, correspondence,
 scribes, tablets, texts) 61, 78, 126, 131,
 133, 143, 145, 311
 AN.TAḤ.ŠUM 210, 220, 230-1, 277
 Anu-Ziti 316
 Aphek, Tel 302, 307, 317
 archives (see also administration, annals,
 correspondence, land grants, scribes, seals,
 tablets, texts) 2, 12, 20, 33, 41, 70, 77-8,
 165, 170, 205, 301, 322-3
 Armatana 37
 Arnuwanda I 15, 37, 320
 Arnuwanda II 15
 Arnuwanda III 15, 43, 66, 73
 Arzawa 37, 127, 284, 303, 317

Aslantaş 225
 Aššur 32, 34, 275, 285, 302, 315
 Aššuwa/Aššuwān Confederacy 303, 309, 317
 Assyria 15, 17, 38-40, 43, 127, 138, 314-5
 Azzi 15, 37
 Babylon/Babylonia(n) 16-7, 31, 32, 34, 35,
 40-1, 43, 88, 92, 125, 127, 138, 208,
 301-2, 314-6, 322
 Babylon stone 276, 316
 Balih river 39
 BĒL MADGALTİ 90, 92, 145, 165, 175,
 185
 Bentešina 40, 311
 Beycesultan 4, 8
 Beyköy 58
 bilingual texts 63
bit hilani 207, 313
 Bitik 257
 Black Sea 31, 195, 266, 322
 Boğazköy 2-6, 11-3, 19-21, 34, 41, 54, 55,
 57, 58, 60, 63, 66, 68-9, 71, 74, 89, 99,
 104, 106-9, 111-3, 115, 118-21, 128-30,
 137, 141, 154-6, 160, 165, 168, 170,
 172-3, 176-85, 196-7, 201, 203, 205-7,
 209, 211, 213-4, 221, 228-9, 243-4,
 246-8, 250, 252, 254-6, 258-9, 261-2,
 265, 267, 285-6, 288, 291-2, 295-7, 302,
 304-5, 309, 313-4, 316, 319-22
 Bolu 4, 12, 284
 Büget 4
 Büyükkale 73, 74, 76-7, 160, 162-4, 169-71,
 175, 181, 183, 196, 209-10, 226, 244,
 248, 259, 313, 319
 Büyükkaya 111-2, 117, 120-1, 175, 182,
 244, 246-7
 bullae (see also archives, land grants, seals)
 51-2, 64-5, 69, 73, 307, 317
 Burnaburias 315
 Çağdın 58
 Central Anatolia(n) 4-6, 8-9, 11-3, 19-20,
 31-3, 36-7, 44, 68, 99, 103, 201, 234,
 241-3, 262-3, 264-7, 284, 301, 304, 311-3,
 318-9, 321-3

- chariots 125-6, 129, 132-3, 135-6, 138-45,
 171, 196, 208, 257, 278, 314
 Chian 305, 319
 Cilicia 7, 9, 39, 234, 236, 259, 262-3, 310,
 313, 321-2
 Cilician coast 39
 Cilician Gates 8
 Cilician plain 236
 Çivril 58
 clay tablets 16, 20, 33, 36, 49-50, 52, 55-7,
 71, 74, 99, 164, 166, 170-1, 276
 correspondence (see also annals, archives,
 scribes, tablets, texts) 41, 43, 62, 64, 76,
 145, 182, 309, 318
 Council of Elders 91
 Council, royal 36
 crown prince 135
 cult(ic) 37, 44, 59, 60, 63-4, 66, 75, 77, 115,
 125, 161, 165, 170-1, 196, 205-6, 208-12,
 226-7, 231-2, 235, 249, 254, 257, 260,
 276-7, 279-80, 295, 309
 cuneiform script 19, 47, 49
 Cyprus/Cypriot 43, 254, 262-3, 285, 320-1

daḥamunzu episode 39, 317
 Delihassanlı 58
 Deve Höyük 312
 diptych 53
 Dövelek 292
 DUMU.LUGAL 95
 Dur Katlimmu 302, 315
 Dur Kurigalzu 57

 Ebla 33, 34, 302, 312
 É.DINGIR 205
 Eflatun Pınar 4, 7, 222-5, 236
 É.GAL 77, 154, 167
 É.GIŠ.KIN.TI 171, 207, 211
 Egypt(ian) 14-7, 20, 31, 36-42, 44, 57,
 69, 77, 95-6, 105, 121, 126-7, 129,
 132-3, 137-9, 143, 195, 208, 254, 262,
 283, 286, 288, 291, 301, 304, 314,
 316-20, 323
 Egyptianising 319
 El-Qitar 312
 É.LUGAL 77, 167
 Emar 4, 10, 13, 39, 57, 58, 68, 89, 302, 307,
 311-3, 315
 Emirgazi 58, 66-7
 Empire period 6-8, 10, 12-3, 18-9, 31, 126,
 162, 165-6, 173, 201, 226-7, 233, 242,
 251, 260, 267, 280, 296, 312, 314
 É_{NA}.DINGIR^{LIM} 221
 epics/epic poetry 61-2, 78
 É.ŠÀ 208-9
 É.ŠAG 176
 Euphrates 10, 33, 35-41, 89, 95, 234, 314,
 317

 Faqous, Tell 302, 311
 Fara (S), Tell el- 302, 317
 Fasillar 225
 Ferzant 4, 12, 245
 festivals 60, 87, 210, 220
 Fraktin 58, 66, 87, 234-5, 237
 Fray, Tell 302, 312
 funerary ritual 60

 GAL MEŠEDI 94, 135
 Gavurkale(s) 4, 7, 173, 229, 232-3, 236, 286
 Gilgamesh 62-3
 Göllüce 228
 Gordion 4, 8, 12

 Ḥabur river 38
 Hagia Paraskevi 302, 321
 Ḥaḥḥa 180
 Ḥaḥḥum 34
 Ḥakpiš/Ḥakmiš 40
 Hala Sultan Tekke 302, 321
 Ḥalab/Aleppo 33-5, 58, 66, 68, 89, 94, 96,
 302, 313, 315
 Ḥalab-Jamḥad 310
 Hama 2, 312
 Ḥammurapi 35, 92
 Ḥanigalbat 40, 96, 314
 Ḥantili I 15, 181
 Ḥantili II 15
 Hanyeri 58, 234-7
 Hapalla 303
 Haremhab 39
 Ḥaššum 33
 Hatip 12, 58, 234
 Ḥatti(an) 15, 31, 37-41, 44, 47, 49, 59-60,
 62-3, 72, 85, 87, 96, 125, 127, 131, 208-9,
 301, 310-1, 314-20, 322-3

- Hattuša 2, 5, 13, 19-20, 31-3, 37-41, 43-4, 49, 53-4, 57-9, 61-7, 70, 71, 73, 74, 90, 99, 104, 106, 107, 109, 112-7, 119, 136-7, 139, 141-2, 145-6, 154, 156, 162-4, 167, 170-1, 173-5, 181, 183-5, 195-7, 200-4, 206-10, 213-5, 225-6, 242, 244, 246, 248, 250, 252, 255, 267, 286, 301-2, 309, 314, 316, 319, 321-2
 Hattušili I 15, 31-4, 36, 113, 126, 131, 139, 144, 180, 187, 203, 301, 310
 Hattušili III 15, 41-4, 66, 87-9, 95-6, 205, 213, 220, 278, 282, 315-8
 HAZANNU 180, 185
 Hemite 58, 86, 236
 Hepat 53, 220, 225, 230, 234
 hieroglyphic/hieroglyphs 13, 33, 47-9, 53, 55-8, 61, 67-8, 78, 261, 309, 313, 316
 Hila 205
 Hīlammar 205
 hippological texts 59, 63, 76
 Hišmi-Šarrumma 95
 historical prose 61, 78
 House of Labour 207
 Hurrian 5, 34, 36-7, 40, 47, 49, 59-60, 62-3, 76, 88, 138, 313-4
 Hüseyindede Tepesi 4, 6, 255, 257, 309
huwaši 166, 196, 220-1, 228-9
 Huzziya 15
 Huzziya I 15
 Huzziya II 15

 Ialysos 302, 307, 309
 Ilıca 4, 12
 Imamkulu 58, 234-5, 237
 Imikuşağı 4, 10
 İnandiktepe 4, 7, 58, 163, 167, 169, 176, 203, 255, 257-8
 Indo-European 31, 49, 62, 125
 Işmerikka 37
 Işputaḫsu 68, 72, 310
 Istar 235
 Işuwa 37
 Isywa 317
 Ivriz 227

 Kadašman-Enlil II 316
 KÁ.GAL 205
 Kalavassos-Hagios Demetrios 302, 308, 321
 Kaman Kalehöyük 4, 7, 11, 120-1, 176, 283, 297
 Kaneš/Neša (Kültepe) 31-2, 48, 128, 207, 215, 285-6, 288, 292
 Karabel 19, 58, 68, 86, 137, 233-4, 237, 302, 304
 Karadağ 68
 Karakuyu 21, 58, 66
 Karga 58
 Karkamiš 4, 10, 34, 38-9, 43, 68, 89, 94, 96, 278, 295, 302, 311-2, 317
 Karum period 7, 174, 187, 215, 242, 245, 247, 249, 251, 253, 256-7, 260, 263-4, 266-7, 283, 288
 Kaška(n) 11, 13, 37-9, 65, 91, 127, 135, 138, 145, 266, 284, 303, 318
 KASKAL.KUR 225, 226, 231
 Kassite 315-6
 Kaššu letter 182
 Kastamonu 4, 12, 284, 294
 Kayalıpınar 4, 7, 13, 57-8, 184
 Kazankaya 4, 12
 Kazel, Tell 302, 312
 Keban 267
 Keben 234
 Kikkuli 126, 141, 314
 KILAM festival 60, 220
 Kilise Tepe 4, 9
 Kinet Höyük 4, 9, 247
 Kırıkkale 302, 319
 KISLAH 175
 Kızıldag 12, 68
 Kızılırmak 5, 7, 11, 186, 220, 228, 261
 Kizzuwatna 36-7, 68, 72, 88, 96, 278-9, 284, 310
 Kocaoğus 58
 Korucutepe 4, 9, 68, 115, 119-21, 295-6
 Köylütolu 58
kuirwana 96
 Külhöyük 182
 Kültepe 31-2, 48, 128, 207, 215, 285-6, 288, 292
 Kumarbi 62
 Kummanni 88, 234, 235
 Kupanta-Kuruntiya 304
 Kupit 228
 Kurunta 15, 42, 96, 234, 296
 Kuruntiya 53

- Kuşadası 302, 304
 Kuşaklı 4, 6, 12-3, 18-21, 57-9, 63, 66, 68-70, 99, 101-8, 113-5, 119, 130, 134, 137-8, 154-5, 158, 160, 166, 168, 170-2, 174, 176-8, 180-1, 183-5, 201, 203-7, 209-10, 213-5, 227-8, 245, 251, 254, 262, 286, 302, 305, 309, 321
 Kuššar 32, 187
 Kuwatnamuwa 226, 235

 Labarna 15, 32, 85
 land grants (see also archives, bullae, tablets) 52, 64-5, 91, 310
 lapis lazuli 276, 309, 312
 Lawazantiya 88
 Lelwani 53
 Levant 43, 126, 195, 262, 316
 lexical lists 59, 61-3, 78
 library (see also archives) 77-8
 Lidar Höyük 4, 10, 134, 141
 Lišipra 184
 LÚ AGRIG 178
 Luwian (see also hieroglyphs) 13, 31, 33, 47-9, 55-6, 58-61, 67, 78, 309, 313
 Lycian 53

 Madduwatta 320
 Malkaya 58
 Maraššantiya 220
 Marduk 35
 Maşat Höyük 4, 6, 13, 19, 58, 68, 145, 154, 161, 163, 165, 169, 178, 256, 262, 302, 305, 309, 321
 Medinet Habu 318
 Megiddo 302, 306, 316
 MEŠEDI 94, 136, 162
 Meskene 58
 Mesopotamia(n) 16, 32, 36, 40, 43, 47, 52, 56, 59, 62, 65, 78, 105, 115, 145, 209, 314, 322-3
 Metropolis 302, 304
 Middle Hittite 5, 18, 31, 36, 125-6, 162, 165-6, 247, 279, 280-1, 313
 Middle Kingdom 18
 Miletus 302, 304
 Minet el-Beida 312
 Mira 19, 234, 303-4, 309
 Mirabello 302, 307, 309

 Mitanni 36-8, 96, 127, 138, 310, 314, 317
 Mitannian 94, 313, 314
 Mittannamuwa 90
 Mountain God 220, 222, 225, 228, 235-6
 Muṣṣili I 15-7, 31, 34-6, 39, 72, 125-6, 310, 313, 315
 Muṣṣili II 15, 39, 61, 78, 88, 131, 133, 142-3, 145, 205, 235, 303, 307, 311-2
 Muṣṣili III/Uṛḫi-Teššub 15, 40, 66, 314
 Muwatalli I 15
 Muwatalli II 9, 15, 31, 39-40, 66, 90, 96, 125, 236, 303, 318
 Mycenae(an) 6, 37, 262-3, 283, 291, 302-5, 308-9, 323
 mythology/myths 59, 61-3, 76, 78, 147, 155

 Nami, Tel 302, 307, 317
 NA₄-ḫekur 231-2
 Neo-Hittite 1, 20, 188, 216
 Nergal 230
 Nerik 7, 154, 220, 234
 Nerikkaili 95
 Nezero 302, 309
 Niḫriya 15, 315
 Niqmaddu II 311
 Niqmaddu III 311
 Nişantaş 61, 66
 Niya 38
 Norşuntepe 4, 9, 243, 286
 Northern Anatolia 37, 40, 127, 266
 Northern Syria 20, 32-3, 36-8, 42, 95, 127, 188, 235, 284, 292, 310-1, 315, 317, 319
 Nuzi 137, 139-41, 302, 314

 Old Hittite (period, kingdom, etc.) 6-10, 18-9, 31-6, 51, 76, 115, 125-6, 137, 144, 146, 209-10, 214-5, 242, 245, 264, 276, 280, 310, 315
 omens 15, 61, 65, 78, 133
 open-air sanctuaries 7, 196, 210, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237
 oracles 50, 56, 59, 64-6, 75-8, 133
 Orontes 38
 Ortaköy 4-5, 13, 19, 57-8, 63, 66, 70, 91, 154, 163, 165, 166, 177, 181, 183, 185, 283, 302, 314, 319
 Osmankayası 4, 117, 251
 Oymağaç 4, 7, 58

- palaces 44, 53, 77, 87, 90, 95, 138, 155, 161-2, 164-7, 169-70, 173, 181-2, 185, 187, 195, 197, 199, 201, 203-5, 207, 209, 211, 213-5, 220, 256, 275, 277-8, 281, 284, 286
- Palaians 31
- Palaic 47, 49, 59-60, 62
- Pi-Ramesse 34, 41, 57, 139, 302, 320
- Pithana 187
- Piyaššili 39
- Porsuk 4, 8
- posterns 146, 179, 182, 313
- potters/pottery 6-10, 18, 56, 206, 211, 213-4, 241-5, 247, 249-50, 251, 253-4, 257-68, 282, 312-3, 321, 323
- priests 88-9, 105, 171, 207, 211-2, 235, 257, 311, 316
- prisoners-of-war 86, 94
- Puduhepa 66, 87-9, 95
- Qadeš 15, 31, 38-41, 132-3, 136-7, 139-41, 143, 302, 311, 318
- Qatna 38, 302, 311
- Qitar, el- 312
- Ramesses II 15, 31, 40-2, 44, 126, 139, 278, 317-20
- Ras Ibn Hani 312
- Ras Šamra/Ugarit 4, 10, 13, 34, 38, 43, 57, 58, 68, 89, 128, 137-8, 182, 277-8, 284, 302, 307, 311-4, 322
- Red Lustrous Wheelmade Ware 254, 262, 265, 321, 323
- religious festivals (*purulliy*) 87, 210
- rock sanctuaries 196, 219, 222, 229, 231-3, 236
- royal bodyguard 135-6, 162, 212
- royal family/dynasty 64, 85, 187, 235
- royal storehouses 36, 44
- Šaḫurunuwa 39, 209
- Šalmaneser 314-5
- Šamši-Addu 32
- Šamsuditana 35
- sanctuaries 7, 166, 196, 210, 219, 221-3, 225, 227, 229, 231-3, 235-7
- Šapinuwa 6, 19, 57-8, 91, 154, 161, 163, 165, 177, 183, 283, 302, 314
- Sargon of Akkad 33
- Šarhöyük-Dorylaion 302, 303
- Sarissa 19, 99, 101-2, 104, 106, 113-5, 138, 154, 158, 160, 161, 166-7, 170-1, 183-5, 201, 210, 228, 302, 309
- Šarkışla 4, 134, 284, 294
- Šarköy 128
- Šarri-Kušuḫ 95, 278
- Šarruma 220, 230, 235, 310, 313
- Šattiwaza 38
- Šaušgamuwa 315
- scribes (see also annals, archives, correspondence, tablets, texts) 51-2, 62, 68, 72, 79, 85, 89-90, 171, 211-2, 276, 282, 316
- Sea Peoples 20, 43, 318, 320
- seals (see also archives, bullae, land grants) 6, 8, 13-4, 36, 47-8, 51-3, 55-6, 64-6, 68-9, 73, 180, 304, 307, 309, 312, 314, 317, 321
- Scha 303
- signe royal* 250, 259-60
- Sikila 43
- Sipylos 58, 68
- Sirkeli 4, 9, 58, 66, 236
- slaves 92-4, 116, 211
- Storm God (see also Weather God) 53, 87, 90, 220, 258
- Sulupassi 161
- Sumerian 47, 49, 59, 62-3, 79, 154, 208
- Sun Goddess 53, 61, 72, 105, 205, 207-210, 225
- Šuppiluliuma I 10, 15, 17, 31, 38, 69, 88, 94, 125-6, 278, 303, 309-11, 314-5, 317-8
- Šuppiluliuma II 15, 19, 37-9, 43, 66, 73, 75, 231, 320
- Šuppitaššu 101-2, 227-8, 236
- Suratkaya 12, 58, 302, 304
- Syria(n) 2, 10, 13, 31-2, 35-6, 38-41, 43, 85, 94-5, 182, 262, 264, 286, 310-3, 318, 320, 322-3
- tablets (see also annals, archives, bullae, correspondence, scribes, seals, texts) 13, 16, 20, 33, 36, 49-53, 55-7, 65, 71, 74, 99, 164, 166, 170-1, 212, 276, 322-3
- Taḫurwaili 15
- Talmi-Šarruma 310, 313
- Tamassos 302, 307, 321

- Tapikka 6, 19, 90-1, 154, 163
 Tarḥu 227
 Tarḥuntašša 11, 19, 39-40, 42-3, 53, 90, 96, 222, 234, 296
 Tarkasnawa 304
 Tarsus 4, 8, 57-8, 68, 169, 203, 286, 288, 302, 310
 Taşçı 58, 234-5, 237
 Taurus 7-8, 32-3, 35-7, 40, 43, 234, 263, 285, 310
 Tawananna 32
 taxes 36, 64, 77, 89-90, 92, 105, 113, 161, 211-2, 277-82
 Tel Aphek 302, 307, 317
 Tel Nami 302, 307, 317
 Telipinu 15, 36, 126, 310, 313
 Tell Afis 312
 Tell el-Amarna 34, 37, 57, 302, 308, 320
 Tell el-Fara (S), 302, 317
 Tell Faqous 302, 311
 Tell Fray 302, 312
 Tell Kazel 302, 312
 temples 7, 18, 53, 61, 66, 72-3, 75-7, 87, 90-1, 94, 106, 112, 115-7, 127, 155, 160-1, 165-70, 173, 178, 182, 187, 195-201, 203-15, 219, 226, 248, 256, 261, 275, 277, 280-1, 284, 286, 291, 313-4, 317, 319
 Tepecik 4, 10, 286
 Teššub 15, 34, 40, 220, 225, 230, 258, 314
 texts (see also annals, archives, correspondence, scribes, tablets) 59-63, 76-8
 Thebes 129, 286, 288, 290, 302, 309, 317
 Thutmose III 317
 Tikunani 34
 Tiryns 291
 treaties (see also tablets) 15, 31, 33, 37-41, 43, 52-3, 59-62, 68, 72, 77-8, 90, 95-6, 126-7, 278, 310-1, 318
 Troy 68, 253, 302, 304
 Tukulti-Ninurta 15, 43, 315
tulija 36
 Tunip-Teššub/Tunija 34
 Tušratta 38
 Tutankhamun 317
 Tuḫaliya I/II 14-5, 37, 40-1, 68, 303, 309-10, 313
 Tuḫaliya III 15, 38, 303
 Tuḫaliya IV 15, 18, 40, 43, 53, 66, 73, 75-6, 89, 213, 225, 230-1, 236, 296, 303, 313-5, 320
 Tuwanuwa 227, 234
 Ugarit/Ras Šamra 4, 10, 13, 34, 38, 43, 57, 58, 68, 89, 128, 137-8, 182, 277-8, 284, 302, 307, 311-4, 322
 Ullama 113
 Ullikummi 220
 Ulmi-Teššub 15
 Ulu Burun 53, 55, 285-6
 Upper Land 37
 Ura 322
 Urḫi-Teššub/Muršili III 15, 40, 66, 314
 Uršu 134, 144-5
 Uru 154
 vassal states 88-9, 95-6, 127, 311
 Venus dates 16-7
 viceroys 10, 42, 53, 89, 94-5, 311
 Walmu 70-1
 Warpalawas 227
 Waršama 216
 Weather God (see also Storm God) 33, 105, 203, 205, 207-9, 219-20, 225-8, 232, 235, 311
 Western Anatolian 40, 305, 309
 Wiluša 70
 wisdom literature 61, 78
 wooden tablets 16, 33, 52-3, 56, 65, 212, 276, 322-3
 Yağrı 58
 Yalburt 19, 58, 66
 Yanarlar 4, 12, 251
 Yazılıkaya 58, 66, 138, 196, 198, 205, 229-32, 236, 257
 Yozgat 6, 58
 Zannanza 39, 95, 318
 Zidanta I 15
 Zidanta II 15
 Zippalanda 220
 Zithariya 53